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THE MICHIGAN FARMER.

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Important Winter Work—Feeding—Manuring—Making Composts.

NUMBER 2.

THE FEED AND MANURE OF MILK COWS AND YOUNG CATTLE.

In the December number, the feeding, cost of keep, and the amount of manure made by a horse, was estimated and calculated as closely as our usual modes of feeding, littering and working the animals would permit. The modes of feeding and littering, and the quantity of manure made by the milk cows, usually kept on a farm of 100 acres of cleared land, will now be taken up. We choose to estimate on 100 acres, because it is a good convenient size, and where two 80 acre lots are combined, there is generally found from 50 to 75 acres of them in wood, or uncultivated. The number of cows kept on a fairly cultivated farm of that size, may generally be put down at from five to six. Their usual treatment in winter is to feed to them what hay and straw and cornstalks they can eat, with water *ad libitum*, if it is where they can get at it; but if the yard be not so located, then they are generally driven twice a day to the nearest watering place. The cows are generally milked at early day light, and again at or before dusk. In the morning they are fed their hay by the armful or the forkful; during the middle of the day they are let out into the yard, where they are permitted full liberty to pick round at the straw and litter with which the yard is covered. Sometimes a straw stack stands in the yard and all the animals kept there have free access to it. In the evening, before the usual hour of milking, the cows are put in their stalls, and they are again fed. During the first part of the winter, it is frequently the case that cows are given pumpkins freely. Many farmers, where the profits of the dairy are thought worth attending to, give their milk cattle three or four quarts of wheat bran per day, with their other food. The whole system, however, consists principally in giving them all the hay, straw and cornstalks, and water, they are

willing to consume, with a handful of salt once or twice a week.

With cattle fed thus, the first question is, how much of the various articles do they consume, during the winter months, when they are confined to their yard or to the barn? Can any of our readers tell how much they actually feed out from the fifteenth of November to the middle of May? the time for which usually cows are confined, or are not let out to pasture.

A cow, of the common breed, such as may be found on most farms, weighs from 600 to 800 lbs. Cows of less weight than 600, may be regarded as unprofitable, especially where they are depended upon for supplying young stock, for fattening, or to sell. The estimate of the dead flesh, without the offal, compared with the live weight, is as 55 to 100. And for every pound of flesh on a cow, to preserve her in condition without loss, according to VET, she should have per day one pound of good first quality hay for every thirty pounds of flesh; or, if the live weight of the animal is taken as the guide, 1.85 lbs. for every 100 lbs. of live weight. These proportions indicate that to keep a cow that weighs alive 600 lbs. at that weight steadily, she must have for the supply of natural waste alone, 11.1 lbs. of the best upland hay per day; a cow of 700 lbs. would require 12.95 lbs.; one of 800 lbs. ought to have 14-80 lbs. of hay per day. But a cow to be profitable, must either be sustaining a calf, giving milk, or be increasing in weight of flesh. An animal that is doing neither of these three things, is most decidedly an unprofitable investment, and should be got rid of without the loss of a day's time.

As the cow shall be considered in this article solely with reference to her ability to make manure, therefore in noticing her consumption of food, we shall treat only of how she is fed, and the quantity of food she uses, as she is generally kept. On the subject of keeping a cow so as to make the most profit from her, as a butter or cheese producing animal, we shall have something to say in a separate article. The general custom amongst most farmers, is to have the largest number of their cows calve, or "come in," during the spring months. We will take for example a cow of five years old, weighing 800 lbs. live weight, at the time she is taken from pasture in the spring. It is calculated that she will calve by the first of May. She is brought in from the barnyard during the month of November, given the run of the barn-yard during the day time, and at night she is housed, and fed morning and evening, with all the hay and straw she will eat. For December, January and February, if a tolerable good cow, she will give milk, from 2 to 4 quarts per day. For two months, March and April, she will be dry, her whole powers being reserved, after sustaining herself, to the growth and development of the calf. Accord-

ingly, a cow, in milk or that is in calf, will require about one-third more food than what is necessary to keep her just as she is. A cow, therefore, that both gives milk and sustains a calf, would consume about 3 to 3½ lbs. per day of hay, for every 100 of live weight, or 24 lbs. Boussingault gives a table, which shows that cows kept in the house on farms in several of the kingdoms of Europe, which weighed from 700 to 880 lbs., and gave milk in various quantities, ranging from 2 to 8 quarts per day, consumed from 22 to 33 lbs. of hay, or its equivalent in other food.

If a cow is kept well fed, from the 15th of November until the 15th of the May following, she will consume during that period, of 181 days, as follows:

181 days hay of a common kind, at 20lbs.	
per day	3620 lbs.
" days fed bran at 4 qts. or 4 lbs. per day	724 lbs.
" days straw for feed or litter, at the rate	
of 10 lbs. per day	1810 lbs.

This would make the whole weight of the material consumed as food and litter 6154 pounds or about 3 tons, or at the rate of 34 pounds of solid matter per day. The water consumed by a cow of this size when fed on dry food, such as the above named articles, will reach from 100 to 125 pounds. Of these the cow voids daily about three fourths the weight in solid and liquid manure, so that a cow consuming each day a ration of food and water equivalent to 160 lbs. in weight, would give back as manure about 120 lbs., of which 50 lbs. would be solid dung, and 70 lbs. would be urine. Of this, let us suppose that the whole of the solid matter is saved, and that of the urine only as much is saved as the litter will soak up. This, it is estimated from experiments, is about one-third. The rest generally runs to waste. This would leave 50 pounds of solid matter, and 24 lbs. of wet straw or litter as the ordinary produce of a cow per day. For the 181 days of winter, therefore, during which a cow is kept in the house or in the barnyard, the amount of manure which she ought to make from the food and litter with which she is supplied, if fed so as to be kept in a fair condition either for milk, or with reference to the healthy support of the calf, would be 13,394 pounds, or nearly 7 tons. This calculation very nearly accords in its results with the conclusions arrived at, after an actual series of trials, wherein the scales determined the whole matter, both in relation to the food and to the manure.

If, therefore, six head of milk cows are kept during the winter season, and fed as we have indicated, and this mode of managing is generally that which is pursued, or something like it, on nearly all farms of moderate size in the State, it may be calculated that they will produce about 42 tons of manure at the end of the season, or about 84 ordinary loads, for as a usual measure, a wagon load as ordinarily carried to the field, unless the manure contains a

greater amount of moisture than usual, w weigh more than half a ton.

Where six cows are kept on a farm, there are generally maintained two calves, two or three yearlings, two young heifers or a yoke of steers, and a yoke of oxen, with perhaps two or three full grown animals to be fattened for sale, making in all from 10 to 12 head more of cattle. They may be enumerated, and estimated so far as regards weight, as follows:

2 calves, 7 months old, each 200 lbs.	400 lbs.
2 yearlings, 18 months 400 "	800 "
2 heifers or steers, 2½ years 600 "	1200 "
1 yoke of work oxen, each 1400 "	2800 "
3 head of fattening cattle, 1600 "	4800 "

Total weight 10,000 "

Allowing three pounds of hay as the daily allowance to each 100 lbs. of live weight requisite for the growth and maintenance of the stock enumerated, and for the 181 days of the winter season, during which there would be no pasturage, there would be fed off in hay, or its equivalent in straw or other material, 54,300 lbs. or over 27 tons. To this may be added at least one ton of straw per head for litter, and which each animal would convert into manure, by treading and by its urine.

If we take the usual ratio of 1.75 of solid manure for every pound of dry food consumed, we have, from—

54,300 lbs. of fodder consumed by 11 head of cattle..... 95,020 lbs.
22,000 lbs. of straw litter, each 14 lbs., retaining 22 lbs,
of liquid manure..... 56,751 "

Total, 75½ tons, or 151 loads, or 151,591 "
Add to this the produce of the 6 cows..... 80,364 "

Total manure from the neat cattle, 116 tons, or..... 231,055 "

In a communication from Justus Gage, Esq., of Dowagiac, on page 138 of vol. 14 of the Michigan Farmer, on the profits of fattening oxen, he estimates the cost of the hay consumed by an ox weighing 2000 lbs. for one week at 50 cents; but in that communication he does not specify the weight of hay fed. Applying the general rule that 3 pounds of the best hay, or its equivalent, was fed to each 100 lbs. of live weight, the amount would be 60 pounds of hay. But in place of a large portion of hay, Mr. Gage gave his ox 12 quarts of corn meal. If corn meal is taken at 56 pounds to the bushel, the weight of the daily ration of meal would be 21 lbs. In the practice of feeding, every 6 pounds of meal is counted equal to 10 lbs. of the best upland hay. This ration of meal therefore was equal to a feed of 35 lbs. of hay, and would still leave 25 pounds out of the 60 to be fed to the animal. This would leave the price of the hay at about \$5.72 per ton, if the ox were fed up to the full ratio above cited. This particular instance is mentioned that Mr. Gage may correct any discrepancy that there may exist between his practice and our calculations as based upon the very best authorities known in agricultural practice. Mr. Gage has not given the price at which he estimated his hay per ton, but we have worked it out as being worth \$5.72; or, 7 daily rations per week of 25 lbs. would

be 175 pounds, costing 50 cents. We are somewhat curious to know how much hay Mr. Gage did really feed to his 2000 pounds ox, and to compare it with the book estimate. Will he please inform us? We have cited this case of feeding to show how nearly the estimates in regard to the amount consumed by other animals come to actual practice.

Having thus shown how much the milk cattle and neat stock consume, and also how much manure they make if properly cared for and fed, it may not be inappropriate to point out the extent of land from which the materials to feed them are taken. The materials thus fed are generally productions of the farm, which will not pay to market, neither would it be considered wise or prudent to market them, unless their equivalents in manuring substances could be brought on to the farm at a cost that would repay the seller. The feeding materials for the neat stock are generally the marsh and clover hay, the corn-stalks, the wheat, oat, rye, or barley straw, and in many cases the corn itself, and the wheat bran that is left where the farmer has his grain made into flour on his own account. These articles are all bulky, and will not pay for transportation; but when economized, they serve well for the manufacture of beef, butter, mutton, wool, and also of the most valuable grains, by the manure which their consumption ensures. Of this part of the subject we shall treat in our next number.

Agricultural Notes in Ohio and Michigan.

(Concluded from December number.)

The State Normal School is at Ypsilanti. There were 325 students from ten to thirty years of age—male and female in about equal numbers. The course of instruction is very complete; and every branch, from grammar to algebra, is taught by lectures. The algebra scholars are getting a thorough grounding;—not only had they to give the rule, but the reason for the rule, as they worked out the propositions on the black board. The students were the sons and daughters of the poorer class of farmers. They only paid six dollars of fees for the winter session; and during summer they either taught in the country, or worked at some trade. It is only from the families of small farmers that teachers can be drawn, as the sons of others who are in better circumstances go into business. The students had fine open English faces; and Dr. Welch, the Principal, remarked to me, it was wonderful how a little brushing up, through teaching, improved them in this respect; verifying Solomon's words, that "a man's wisdom maketh his face to shine." The Americans, in general, make it a point to keep their faces clean, and to have their hair well dressed up. And when this is attended to, shabbier garments are often considerably relieved of their meanness.

There is no statutory obligation to have any religious exercises in this establishment, but a chapter of the Bible is read and a prayer offered up by the Principal before the lessons of the day begin. I was told by him that it would be considered by all as a very loose establishment if there were no religious exercises. A serious and church-going community

can, perhaps, afford to have further religious instruction communicated by those who are specially set aside for this duty. The prevalence of the religious feeling among the educated classes reacts on the educational establishments; and, from all that I learned during my tour in America, I believe that the effect of the present system of education is to leaven the ignorant masses that cross the Atlantic with a reverence for morality and things sacred. One has only to make himself acquainted with the state of some of those towns on Lake Ontario that were visited by Dr. Wright many years ago, and to compare his descriptions of the manners and morals that then prevailed, with those existing at the present day, to be convinced that the tendency for the better is steadily progressing westwards, and gradually overtaking a ruder and rougher state of society.

Mr. Uhl, a most intelligent farmer, who resides in the neighborhood of Ypsilanti, drove us out in his waggon to his house, about three miles from town. His land was once thinly covered with oaks, and having the scrub or dwarf oak as an undergrowth. This kind of natural forest is called "oak opening." The soil reminded me very much of what I had seen in the district surrounding Paris, in Upper Canada. More Indian corn is cultivated here than I ever saw in any part of Upper Canada. The Dent variety of southern Ohio ripens here, which would seem to indicate that the climate is rather warmer than in the same latitude to the eastward. The eight-rowed white variety, however, is cultivated more generally.

The soil consists of a light sandy loam, which seemed to contain but a small per-centage of vegetable matter; so much so, that I thought it might do to mix with lime to make mortar. There was also little difference in the color of the soil and of the subsoil. I was very much surprised when Mr. Uhl assured me that as good wheat and potatoes would be raised upon what was brought up twenty feet from the surface as on the surface-soil itself. If he ploughed deep, he considered that there was no occasion for applying any extraneous manure, save a little gypsum, for the clover or the Indian corn. The condition of this farm, when contrasted with those adjoining, served to confirm the opinion that I had already formed, that the wheat soils of America stand less in need of manure than of good cultivation, and a rotation of crops of not too exhausting a character. The young layers of red clover on this farm were very beautiful, and even the plants in those fields which had been pastured for two years were thick and vigorous. The rotation which he prefers is three years in clover, followed by Indian corn, and then wheat. Amongst the latter, clover is again sown. Wheat, however, is generally sown after clover in this part of Michigan. As in other parts of the Northern States, wheat is sown early in September; and the long autumns cause a very considerable growth before the frosts of winter set in with much severity. Some of the fields of wheat had a remarkably healthy appearance: the color was of the darkest green, and the plants were thickly matted over the ground. For the first time, however, I saw in one or two fields the depredations of the Hessian fly: its larvæ were rendering some of the edges of the fields of a rusty red color.

Mr. Uhl farmed at one time in the Genesee district, New York State, and follows the Genesee mode of farming to a certain extent. The clover fields, when they are to be seeded with wheat, are broken up from the 1st of May to the 1st of July—

a furrow from 8 to 9 inches in depth being given. The surface is then cultivated by the grubber until all the weeds are killed, when the wheat is sown broadcast from the 10th to the 20th of September. Indian corn is planted in squares, or check-rows, 3 feet apart, which system allows the land to be very completely worked by the plough, so that little hand-hoeing is required. Potatoes are also planted in squares, or check-rows—a practice common to all the Western States, by which the crops can be kept free from weeds with little expenditure of manual labor. The climate of North America causes the potato to grow many more long and slender stems than that of Britain; and when earthed up at the roots by the plow, very little hand-weeding is required. The presiding genius of American farming directs her votaries towards the economizing of manual labor in every department of the art.

Mr. Uhl is a great advocate for grazing more, and having less in cultivation; and no doubt the great rise which has taken place in the price of butcher-meat will have a tendency to alter the modes of farming that are pursued in many districts. The cattle were good specimens of the Durham breed. Sheep are not favorites, because they are considered to eat the clovers too close, and the land does not improve so rapidly as when it is grazed with cattle. There were 55 acres sown with wheat, and 20 with Indian corn. All the labor on the farm is performed with the assistance of two servants and five work-horses. Some of his neighbors were sowing a much larger proportion of their land with wheat. One farm, of 110 acres, not all arable, was pointed out where the land was very light, but on which 70 acres were sown with wheat, and on some of the field several crops had been taken in succession.

Under good management, thirty bushels of wheat are sometimes got to the acre over the farm; but the average produce in Michigan is not one-half of this quantity. This year Indian corn had yielded Mr. Uhl seventy bushels per acre. He sometimes sows it broadcast, and obtains about four tons of hay to the acre by cutting it in a green state. Gypsum is attended with very beneficial effects when applied to Indian corn, potatoes, or clover.

Next day we drove to Ann Arbor, a distance of ten miles. The country was undulating, and the soil light, and much of it under wheat, which was very forward, but in some cases sickly, from the attacks of the Hessian fly. The Michigan University is at this town, where the more advanced branches of education are taught free to all. A large library is forming, and a museum of natural history. An observatory was also just erected in the midst of a stump covered country, on which stately trees had lately grown. In every township in Michigan a certain quantity of land is reserved for educational purposes, which affords the means of erecting and endowing free schools. There is no fear of over-educating a nation; for although education may be free to all, the capacity of a people to receive it depends upon the length of time which the parents are able to support their children at school. This is the real difficulty in educating a nation.

Left Ann Arbor in the afternoon, and reached Kalamazoo, a distance of one hundred miles. This is a small town, of four thousand inhabitants, that has very lately sprung up in the wilderness. The numbers of people traveling on business to different parts of the country were quite extraordinary. Next morning I found myself seated at the breakfast table beside a backwoodsman, with his wife and

family. They had all a somewhat melancholy cast of countenance, and seemed to be regardless of the stir that was going on around them. The husband, about fifty years of age, was wiry, but not robust. He told me that he had felled and cleared, in different parts of the country, upwards of 100 acres of heavily-timbered land, and had only got assistance at "log-rolling." As a pioneer in the desert, he spoke with great enthusiasm about his occupation, which, he said, "was hard, but very pretty work." In traveling over America one is very much surprised to find so large an extent of land cleared; but a few thousands of such men are certainly well calculated to change the whole aspect of a wide country, since every stroke of the axe tells.

Drove out ten miles to the southward with Mr. Holmes, to pay a visit to the President of the State Agricultural Society, who farms in Prairie Ronde, one of several little round prairies which stretch along the southern borders of Michigan. The small prairies in this State indicate that there is something peculiar either in the soil or climate which is unfavorable to the growth of wood. These peculiarities are still more fully exhibited to the westward, where an immense area of prairie land exists. The physical causes contributing to the formation of prairies have been much discussed. I shall by-and-by give my reasons for supposing that the chief element that has operated in producing those treeless regions is climate.

The road over which we drove was a plank one, and ran through a thinly-timbered oak forest, growing upon light sand and lime-stone gravel. The boundaries of Prairie Ronde were as well defined as if it had been the bed of an ancient lake. It was about five miles in diameter, and almost as level as a bowling-green, but rather higher in the centre, which has made it quite dry. The upper stratum of vegetable mould is about 16 inches in depth, and consists of a dark-colored sandy loam; the subsoil of a lighter colored loam, resting upon gravel or clay. This kind of soil, being apparently rich in those earthy and alkaline matters which plants require, seems to be well-nigh inexhaustible. Crops of Indian corn, wheat, and oats, are raised for many years in succession, without any manure being applied; but the soil gets very loose when constantly kept under tillage.

The President's farm is 160 acres in extent, and two young men perform all the labor. On this he cultivates 60 acres of wheat, and 60 of Indian corn every year. These crops are often taken alternately for a great number of years. A peculiarity in the mode of raising Indian corn was seen on this farm. It was planted in rows, at intervals of 8 feet, and the distance between the plants in the rows from 6 to 8 inches. This admits of the land being completely cultivated by the plow in summer; and wheat can be sown early in autumn, and grubbed or harrowed in long before the Indian corn is harvested. In fact, while I was there, the wheat was thinly matted over the ground, and a waggon, drawn by a horse, was going down betwixt the rows of corn, and a man on each side was pulling off the large ears, and throwing them into it. The stalks of Indian corn were standing as before, and would do so until the spring, and afford some protection to the wheat-plant against the high winds that sweep across this country in winter. Even when Indian corn was cultivated in 3 feet rows or squares, the wheat was growing among the withered stalks from which the grain had been taken. Thus, although labor is very high,

and the crops of winter wheat do not average more than 14 to 16 bushels, yet they are raised at comparatively little expense in alternation with maize, which yields from 45 to 70 bushels to the acre.

The young layers of red clover were particularly thick and vigorous. When a field is seeded for grass, it is allowed to remain for two or three years, which serves to solidify the soil, and render it better adapted for winter wheat. Around some of the fields the finer pasture-grasses were growing very luxuriantly, and producing a fine herbage.

The President was from home; but his daughter, a very pretty and intelligent girl, acted as hostess. All rise early in America, and dinner is usually served up about noon. There are seldom any soups in private houses, and no liquor is seen stronger than coffee; the table, however, was loaded with most substantial viands, followed by a great variety of dessert. As no warning had been given that strangers were coming, this would be their ordinary fare. The Americans are usually good cooks; and great mechanical skill has been displayed in adapting the kitchen stoves for cooking, which renders this operation less sweating and suffocating than it often is at home. I do not think that our fair hostess had any help to prepare our excellent dinner; but things went on so smoothly that the cook and the lady were thoroughly combined in her person. After having had some good music and native airs from our entertainer, Mr. Holmes and I found our way in the dark to Kalamazoo, highly pleased with our visit to Prairie Ronde.

After bidding adieu to Mr. Holmes, to whom I feel myself under great obligations for his attention, I left next afternoon by railway for Chicago, on Lake Michigan, a distance of one hundred and forty miles. The line runs through a long stretch of "oak openings," which were the finest specimens of this peculiar kind of forest growth that I saw; and what made it more interesting was the circumstance of its being almost untouched by the axe of the backwoodsman. Where oak-openings occur, the soil is dry and gravelly, and the surface is undulating—a feature which seems common to most of the gravels in Europe or America. The oak trees are thinly distributed over the surface, and the distance at which they grow from one another seemed so regular, that one might have supposed that a skilful forester had been employed to plant them. The crooked trunks are usually about a foot and a half in diameter, and clear of branches, from 20 to 25 feet from the ground; after that they are forked, and have no great abundance of branches. They have, altogether, a gnarled appearance. The soil seemed to be too dry and gravelly to support a denser growth; for on the ridges they were from 30 to 40 yards apart, while in the hollows, where the land was more moist, the trees were pretty thickly planted. The contrast is very striking between the densely wooded sands and gravels of New England, which are the very types of sterility, and the stunted growth of the trees on the better soils of the oak-openings. The climate of the Western States is not nearly so propitious to the growth of trees as that of the Atlantic sea-board, on which the rains at certain seasons of the year are more abundant.

Oak-openings, I believe, do not occur farther eastward than Paris in Upper Canada, where the soil is somewhat similar to the oak openings of Michigan. It is generally supposed that the prairies and oak-openings are the result of the Indians formerly firing the country every year for hunting-

grounds. The blackened mould of the prairies is no doubt partly due to the charred vegetable matter from fires which so frequently ran over them. But in the oak-openings there is little evidence of fire being concerned in their formation, for the color of the vegetable mould is of the same fine hazel tinge which prevails in the oak forests of Ohio. These gravelly soils can only support a limited number of trees, and the waste of vegetable matter from decay has always been about equal to the annual growth; so there is no accumulation. I have no doubt that soils of similar quality to those in Michigan would produce dense forests in Vermont. It is rather curious that the deficiency of rains occurs principally in winter, which appears to be the most marked peculiarity of the climate of the North-Western States. The following figures are taken from the reduction of observations by the Smithsonian Institution:

<i>Fall of rain at Gardner, in the State of Maine—average of 15 yrs.</i>			
Spring.	Summer.	Autumn.	Winter.
10.6 inches.	10.3	10.5	10.1
<i>Fall at Fort Snelling, Minnesota's Territory—15 years.</i>			
Spring.	Summer.	Autumn.	Winter.
9.5 inches.	10.2	5.7	2.0

The North-Western States are also more liable to protracted periods of drought, which, Dr. Henry suggested to me, might originally have destroyed the forests with the assistance of fires; and when the grass and various plants had once got possession of the land, they would prevent the seeds of the forest trees springing up. The best prairie lands had an unctuous clay in the subsoil, and such is, no doubt, most conducive to the growth of grasses. On the other hand, in the great western prairies, there are usually stunted oaks, with the scrub oak as an undergrowth, of the same character as in the oak-openings, growing upon all the gravelly eminences which are not favorable to the growth of grasses; and, consequently, one generation of trees after another maintain their hold upon these knolls, and often appear like islands in the grassy wastes. On the prairie knolls, as in the oak-openings, there is no great accumulation of vegetable matter from the growth of timber; but where the soil is more propitious to the growth of grasses, an immense accumulation has taken place. I have often wondered at seeing the enormous depth of mould even on some of the tops of the rounded wave-like eminences that prevail in the prairie region.

The Swedish traveler, Kalm, relates that the prairies were, even in his time, less productive of pasturage, in consequence of the cattle having extirpated all the best grasses, which he tells us were annuals. The cattle, he remarked, did not allow the seeds to come to maturity, and hence they disappeared. I thought this was rather a curious statement when I saw it, as annual grasses do not predominate in natural pastures; and Professor Warder, of Cincinnati, assured me that the statement of Kalm was not correct. But the perennial grasses of the natural prairies are rapidly disappearing under pasturage, as well as the great variety of wild flowers with which they were at one time adorned in early summer.

For twenty-eight miles before reaching Chicago the country becomes a dead level, rising only a few feet above Lake Michigan. It is damp and marshy, and covered with coarse rank grass, which cattle do not touch in summer. It was rather late before I arrived at the town, and the night was very dark. The long withered grass was on fire in several places, and the flames from four to five feet in height, were

advancing in a line extending for several miles in length, and it was altogether a most magnificent sight. On arriving at Chicago there were upwards of twenty omnibusses waiting to convey the passengers to different parts of the city, besides as many waggons for luggage. The town apparently had risen so rapidly that no time had been got to pave the streets, which were almost impassable, until a broad street covered with planks was reached. The hotels were huge and elegant structures, and very similar in their management to that of the first-class establishments in the eastern towns.

The wharves at Chicago were covered with steamers, and the immense piles of goods around the railway stations bespoke the general plethora in trade and commerce. Indian corn, wheat, wool, beef, and bacon are the chief exports. For some time in the autumn of 1855 one million of bushels of wheat were delivered weekly in the town. Several vessels have taken in cargoes in the harbor and gone direct to Liverpool. The greater part of the wheat is of a secondary quality, as it is nearly all sown in spring.

I observed small steamers having machinery fitted up for taking grain out of one vessel and putting it into another. They were also made available for lifting it out of the vessels and storing it into granaries. The wages of common laborers being from 4s. 6d. to 5s. a day, act as a great stimulus to economise manual labor.

One afternoon I had a drive out into the country for a few miles with a manufacturer of reaping-machines. He went out to make a trial of one in cutting the withered prairie grass, and really it did its work remarkably well. He informed me that he had manufactured 700 of these machines last year, and would make as many this. The level prairies are admirably suited for reaping by machinery; and where labor is so scarce and high-priced, the reapers have been a great boon to the prairie farmers, many of whom cultivate very extensively.

In returning to the town I was quite surprised to see so many handsome villas in the suburbs along the shore of the lake. The best houses are made of sandstone, which is the finest I ever saw: it is close in the texture, and almost as white as marble. The rise of property around the town has been enormous within the last four years. Land two miles out along the lake shore sells at £200 per acre, and some in the suburbs as high as £2,000. The progress of Chicago has been most remarkable; and, unless San Francisco, in California, no town in America has risen so rapidly. It only contained 4,479 inhabitants in 1840, and now there are nearly 80,000, about double the population of Toronto, in Upper Canada. This amazing growth has been stimulated by the formation of railways and canals through the immense tract of rich prairie country, which offers to be the most productive region for grain in North America. The facilities which now exist for transporting the produce of the interior have already tapped its agricultural capabilities, and hence the commercial prosperity that has arisen in exporting that produce, and in importing and circulating the large amount of the other necessities and luxuries of life, which the inhabitants of a rich and newly-settled country invariably consume. Thus, in the free States that possess a good soil and an easy outlet for the produce, numbers of thriving towns often rise up like mushrooms; and if countries ever had a golden age, Upper Canada and the Western States are now enjoying theirs.

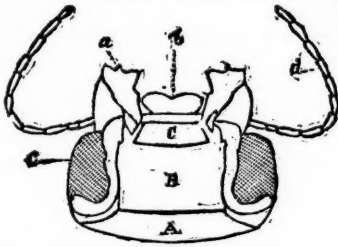


Fig. 2.

On the Structure and Functions of Insects.

BY HENRY GOADBY, M. D., F. L. S.

Condensed for the Farmer from the original in the Medical Independent for November, by permission of the Author.

In the preceding chapter, it was observed that in the natural division, Articulata, which comprises the class Insecta, the skeleton is placed on the external surface of the body and is sometimes found "hard and brittle as in the beetle, and in other instances, soft and elastic"

The spines, hairs, and scales, which cover more or less the bodies of many insects, are analogous to the horns, nails and claws of the higher animals.

Among the first studies for the practical entomologist, is a perfect knowledge of the insect skeleton. In the course of entomology, which Dr. Goadby taught as professor in the University of Albany, New York, this study of the skeleton was insisted upon as the foundation of a perfect knowledge of the whole



Fig. 3.

science, and out of 60 pupils, each of them, from a fragment of a skeleton, or the fragment of a wing, could tell the order of insects to which it belonged. The alary, or wing system of classification, is so perfect, that it is found that a certain form of wing, invariably is associated with a characteristic form of the skeleton. This will be more fully shown in the modifications of structure which adaptations for



Fig. 4.

peculiar ends seem to require in the several individuals.

In structure, the skeleton of the insect bears a re-

markable analogy to that of the human skin. The tissues of both consisting of three layers, and hence the same names are used by naturalists to designate both.

These layers are,

1. The *epidermis*, or outside skin, smooth, shining, colorless, and transparent.
2. The *rete mucosum*, or mucous network, which of itself is composed of two layers; the upper, smooth, attached to the epidermis, and containing those brilliant metallic colors, which render insects so beautiful. The under layer is uniformly black, or a dark brown, which serves to intensify the bright colors of the upper layer.
3. The *corium*, or leathery covering, composed of

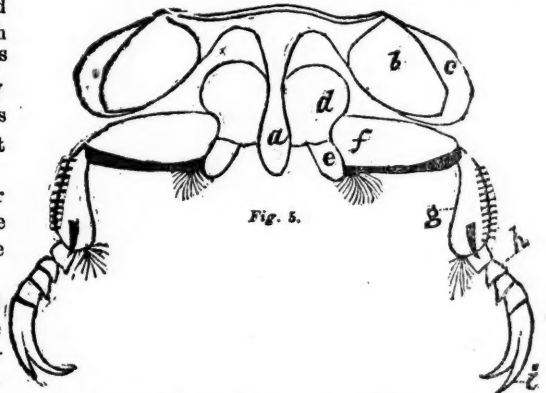


Fig. 5.

layers of fibres which cross each other in every direction. From this layer of the skin the hairs grow, and in it their roots are formed.

To illustrate a knowledge of this department of the structure, figures of skeletons, and parts of skeletons, of various insects will be presented. The first offered is the skeleton of a true crustaceous beetle, *Dyticus marginalis*, the largest aquatic beetle known in Great Britain, excepting the *Hydrophilus piceus*. The *Dyticus* measures an inch and a quarter in length.

The cut, fig. 2, represents the head of the insect, but only the upper portion of it. It is divided as follows, the letters marking the portions referred to in the cut:

- A, is the *skull*;
 B, the *frons*, or portion of the head analogous to the frontal bone of man;
 C, the *clypeus*, to which is attached:
 a, the upper jaw, or mandibles,
 b, the labrum, or upper lip,
 c, the compound eyes,
 d, the jointed antennæ, common to all insects.

In all insects the mouth is closed by a pair of lips—upper and under—more or less hard or horny, or cornuous,—and more or less definite. The lips in the insect under consideration are particularly well developed.

In fig. 3 we have the under portion of the head:

D, is the *gula*, or throat bone ; c, is the *lower lip*,
f, is the *maxilla*, or lower jaw.
j, is the *mentum*, or chin.

Attached to the under lip and under jaws are certain jointed organs, called *palpi*, or feelers, which serve the insect as hands in conveying food to the mouth. These are of two kinds, viz:

g, the *maxillary palpi*, or jaw feelers,
i, the *labial palpi*, or lip feelers.

Sometimes the under jaws possess two pairs of these feelers ; but it may be noticed where this happens the second pair is smaller than the first, and these may be noted on the cut.

The second division of the insect is the **THORAX**, or *Chest*. It is divided into three distinct portions, which in some insects are separable and in some not.

They are,

1. The *Prothorax*, which means the portion next the head, or the anterior part of the thorax.
2. The *Mesothorax*, the middle portion, (from *meso*, middle.)
3. The *Metathorax*, or posterior portion, (from *meta* the last or hinder.)

Every segment of the body of an insect, is divided into two parts, the *dorsal* or upper portion, which is a part of the back, and the under, or *ventral*, which is part of the lower side of the insect. These upper and under portions of the thorax are connected by side bones, which sometimes belong to the back portion and sometimes to the under portion, as may happen, according to what portion of the chest they may belong.

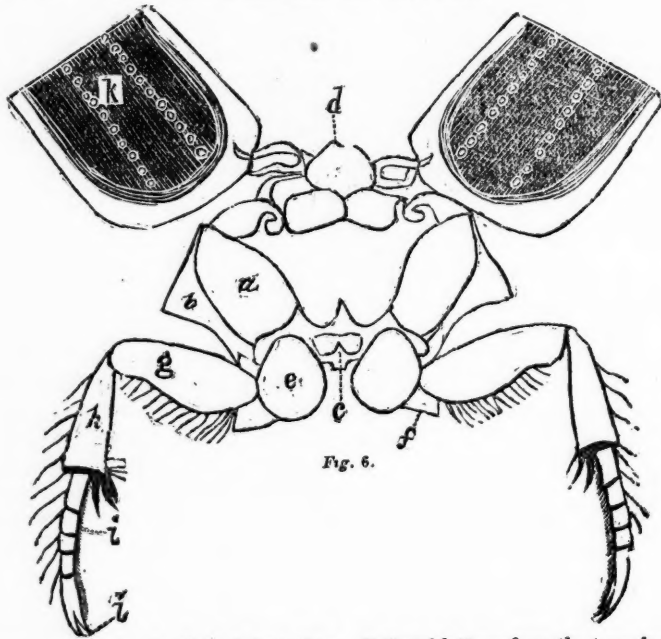


Fig. 6.

The Prothorax, accordingly, is divided into the dorsal and ventral parts, which are called,

1. The *Pronotum*, the anterior and dorsal part of the thorax, (from *notum*, the Latin for back.)
2. The *Prosternum*, the anterior and under portion of the thorax, (*sternum* being the Latin for breast bone.)

Fig. 4 represents the *pronotum* of the beetle *Dytiscus*. The dark part is where it is attached. The light or transparent part on the anterior side hangs over and may conceal the head; and the hinder transparent portion encroaches on the middle chest.

Fig. 5 represents the *prosternum*, its various bones with a pair of legs attached to it. The several parts are :

a, is the *sternum*, or breast bone.

b, are two large shield-shaped bones, which perform functions similar to shoulder blades but are named *omia*, from the Greek word for little shoulder, to

distinguish them from the true shoulder blades, or scapulae. These bones offer large broad surfaces for the attachment of the muscles of the anterior legs.

c, marks the side bones which connect the *omia* with the pronotum.

d, *coxa*, or hip bone, subject to a great variety of form, and frequently movable, but in this insect it is fixed.

e, is the *trochanter*, a small bone, between the hip and the thigh, not always present.

f, the *femur*, or thigh articulated to the hip.

g, is the *tibia* or shank, with its outer and inner surface beset with spines.

h, is the *tarsus* or foot, which is composed of five joints in this beetle, and which are termed *phalanges*, because they represent the bones of the human finger. Sometimes the first and sometimes the last of these joints are the longest.

i, is the *claws*, with which the last joint of the foot is provided.

The anatomical name for the claw is *unguis*.

The hooks of the claws are equal, unequal, or broad, and compressed. Usually they are simple, but sometimes they are bifid and found occasionally with serratures on their internal surface.

The number of joints in the foot varies from one to five, and forms a valuable characteristic of modern classification. The feet, however, are found frequently unequal in their development in the same insect.

Thus, the feet of the posterior legs, will often present five joints, whilst the other two pairs of legs are furnished with feet consisting of four joints only.

This diversity is very common, and requires that the feet of all the legs should be carefully examined, and the joints counted, otherwise great mistakes may be committed.

The middle segment of the second division of the insect, or *mesothorax*, now demands attention. In the beetles, this division has not only a pair of legs always articulated to it, but there is also a pair of wing covers, or of true wings, attached to the back plate. In the Diptera, or two winged insects, the wings are always attached to this division.

In Fig. 6, the whole bones of the *mesothorax* are presented, as they are connected. The upper and under portions are called :

1. The *mesonotum*, or middle back.
2. The *mesosternum*, or middle breast.

The bones of the middle back, or *mesonotum*, are seen at

d, the bones of the back,

k, the wing covers, or *elytra*, articulated to it,

a, and *b*, are the scapulæ, or shoulder blades, to which are attached the great muscles, that fold and unfold the wing covers.

The middle breast, or *mesosternum* is composed of *c*, the sternum or breast bone ;

e, the hip, *g*, the thigh, *h*, the shank, *i*, *i*, the tarsus or foot bones, with equal claws, of the middle pair of legs.

In this insect the wing covers are distinguished by depressions or a series of holes which are marked on the wing cover as seen in the cut. The shank bone of the leg also has a pair of strong spines where it is attached to the foot.

To be Continued.

Varieties of Wheat.

MR. FARMER:—I wish to be instructed concerning several varieties of wheat "that we sometimes read about" in your print—viz: "China Wheat," "Tea Wheat," "Australian Wheat," and "Tuscany Wheat," are they of the spring or winter wheat family, or which is of each family? What are the relative merits for cultivation—especially as to the two first

mentioned varieties, and where can the best seed be obtained? Also, are "White Flint," and "Soules Wheat" two names for the same thing, or are they distinct varieties? Information on these points will confer a particular favor upon, and perhaps benefit others as well as

A SUBSCRIBER.

November 24th, 1856.

The Chinese wheat is a white beardless variety, and is very little known; we believe it is a winter wheat, but is not cultivated to any extent. The Tea wheat is sometimes known as the Siberian wheat, a spring variety, and considered one of the very best. The berry is white, and it yields a pure white flour. The straw is rather short, and the heads of medium length, but the grains are not closely packed, each whorl being distinct and separate from the one above it, giving the head a lean unprolific, and light bearing appearance.

The Australian wheat is a winter variety which has been introduced within the past year. It is a large stemmed, heavy strawed wheat, with a very long large berry. Several farmers have tried it in this State, and some of them have found it to produce largely. Still it has not become a favorite. In the trials to which wheat has been submitted for the past three years, the Australian variety seems to have been wiped out. On page 136 of vol. 13 of the *Michigan Farmer*, D. D. Tooker, of Napoleon, gives an account of his experience with it. Mr. Dougherty, of Berrien Springs, exhibited a sample of his wheat at the State Fair of 1854, and the berry was remarkably large, full, and heavy. But for the past two seasons we have heard nothing from it.

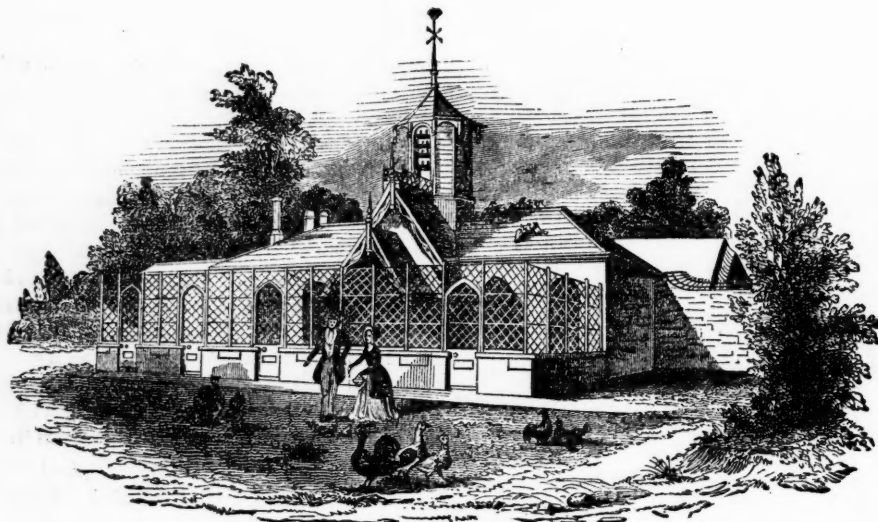
There are two varieties of Tuscan wheat. The Tuscan Bald, and the Tuscan Bearded. Both are winter varieties, and were introduced from Tuscany into the State of New York in 1837. The berry of both varieties is large and white, and the heads are large compact and well filled. Both varieties are tender, and liable to winter kill, and this defect has not permitted either to become generally cultivated. Where this has not happened, or where the variety has been acclimated, it has produced heavy crops. The Messrs. Penfield advertise Tuscany wheat for sale, and could undoubtedly procure the seed of any variety which might be wanted.

"White Flint" and "Soules wheat" are two distinct varieties. Both are white wheats, and both are winter varieties. The first is supposed to have been originally introduced into New Jersey in 1814, from Spain. There is also a sort of traditional claim that it was brought out from the Black sea. The straw of the White Flint is of medium length, not so large as that of some other varieties, but tough, solid towards the root, and not so liable to lodge. The heads are a medium length, with from thirty to forty grains in each. The grain is white in color,

plump, not large, but solid, with a thin skin. Mr. Rawson Harmon, of Wheatland, Monroe County, New York, states, that a valuable peculiarity is found in it, and which no other variety possesses to a like degree, and that is the tenacity with which the berry adheres to the chaff. This variety also is considered very hardy, and the heaviest crop ever grown on the Genesee Flats was from this variety and the Red Chaff Bald, the two giving back, 68 bushels and 43 lbs per acre.

The "Soules Wheat" was first introduced to notice by Jonathan Soule of Perrinton, Monroe county N. Y., in 1836 or 1837. This is a bald variety having a straw of medium length, with heavy full head. The wheat looks like a mixture of red and white, and

some heads have a red chaff and some are white. The berry is white of medium size, very thin skin, and yields a large proportion of flour of the best quality to the bushel. It has long been a favorite variety in this State, but of late it has deteriorated, we think, owing to want of care in selecting the seed. The Bluestem, and the Canada Flint, or Canada Club, or Hutchinson wheat as the latter is sometimes called, have been found more prolific, and have taken the place of the Soule's wheat with many farmers. While others have given up white wheat altogether on account of their inability to grow it, and have taken to the Mediterranean as being more hardy, and more certain to prove profitable.



QUEEN VICTORIA'S POULTRY HOUSE.

The American Poulterer's Companion.

The poultry yard as a source of profit has had too little attention paid to it. There has been too much speculation of late on fancy varieties, and not enough care given to make the business of rearing, selecting and feeding for market a profitable occupation. There is no reason for this. Eggs command during the year, with the exception of a short season in spring, paying prices; a dozen is hardly ever sold at less than eighteen pence. Poultry is in demand at all times, at high rates, and must remain so while the demand and consumption is increasing, and while all kinds of meats keep up at the rates of the past two years. Chickens, turkeys, geese and ducks are not to be had at any time at rates short of 12 cents per pound, and first rate, heavy specimens are always scarce and high priced.

The Asiatic fever has died out, and it is true that there is little speculation in fancy five, ten or fifteen dollar roosters, but good, stable, hardy varieties like

the Dorking, or the Dominique, are still in demand, and inquiries are being made from time to time, relative to new sorts. Those who want choice specimens will apply to our friends, Messrs. Cook & Hodges, of this city, or to Mr. Cressy, of Royal Oak. In the meanwhile, for those who seek a good practical book on the subject, we commend to them the late edition of the *American Poulterer's Companion*, which has recently been published by the Messrs. Harpers of New York, in a most superior style. This work is written by C. N. Bement, of Albany, N. Y. He has had much experience with poultry himself, and when the first edition of the work was published, it was considered the best work of the kind in the country. The edition just issued by the Messrs. Harpers, however, is very much superior to the first one, and in beauty, number and accuracy of illustrations, both by wood engraving and by lithograph, it becomes very valuable as a book of reference. We believe that every known variety of the domestic

fowl, is not only described, but also illustrated by an engraving or lithograph. Of the common and uncommon barnyard fowls, there are no less than forty-six varieties described. These are divided into the wild or jungle fowls, of India, of which there are six varieties; the six varieties of the Asiatic fowl; twenty-four varieties of farmyard fowls, and ten varieties of the crested fowls. The work describes the general management and profits of fowls first, and then gives descriptions and illustrations of eighteen different kinds of poultry houses, from Queen Victoria's superb poultry house, of which we give an illustration at the head of this article, to VanNuxen's cheap poultry house, the latter of which is one of the most excellent we have seen. As the merits of the Dorking fowls are attracting a good deal of attention at present, we quote from this work their history:

Mr. Dixon, a celebrated writer on poultry, remarks, on the subject of the Dorkings; "For those who wish to stock their poultry-yards with fowls of the most desirable shape and size, clothed in rich and variegated plumage, and, not expecting perfection, are willing to overlook one or two other points, the speckled Dorkings are the breed to be at once selected. The hens, in addition to their gay colors, have a large vertically flat comb, which, when they are in high health, adds very much to their brilliant appearance, particularly if seen in bright sunshine. They are larger bodied, and of better proportions, according to their size, than any other variety I have yet seen, their bodies rather long, plump, and well fleshed; and the breeder, as well as the housewife, generally beholds with delight their short legs, full broad breasts, little oval and the large quantity of good profitable flesh. The flavor and appearance of which is inferior to none. When fattened and served at the table, the master and mistress may be satisfied. In size the Dorking ranks next to the large Asiatic tribe. It is short-legged and large-bodied, and readily accumulates flesh, which is of good quality. The breed has been introduced from England, and has been bred in this country for a number of years. Mowbray, when he wrote, ranked them in size in the third degree of the largest of fowls. The weight of the Dorkings at maturity varies from five to eight pounds, and full-grown capons have been known to weigh from ten to twelve.

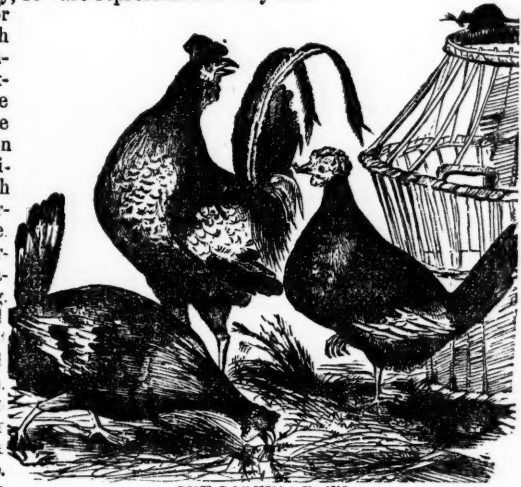
The Dorking hen is rarely a layer of many eggs before she becomes broody, the average number not exceeding twenty-four. The eggs are usually of a clear white, but sometimes of an ashy-gray color, rather large in size, weighing from 2½ to 3 ounces each, rounded at both ends, and of a rich flavor. They have the reputation of being excellent sitters, and good mothers; but as pullets they do not excel for either employment.

The Dorking cocks are splendid birds. The most gorgeous hues are frequently lavished upon them, which their large size and symmetrical form display to great advantage. The original Dorkings are said to have been white, but such are now seldom seen. From the specimens we have seen, we have no reason to believe that color is a criterion of purity. Mowbray contends that they are of an ivory-white, and that they have uniformly five toes or claws on each foot, while a writer in "Rees's Cyclopaedia" says "the

colors are as variable as the dung-hill fowl." "The most valuable variety for the table at present," says Main, "is the Dorking breed. They are pure white; and highly esteemed for the whiteness and delicacy of their flesh when served at the table, and fetch a high price in market."

Among the early importations of pure-blooded Dorkings into this country, white more or less prevailed; but many were marked with bands or bars of ashy-gray, like our Dominique fowl; some had the hackles of the neck white, with a tinge of yellow, and the body of a darker or brownish-red, intermixed irregularly with white; while others were beautifully variegated with white, black, green, and brown, commonly called speckled. The combs of some cocks are large, serrated, and erect; in others, large and rose-shaped; wattles large and of a brilliant coral.

The Dorking fowl, more or less crossed, or at least a race nearly allied to them, called the "Sussex breed," the bodies of which are more elongated than in the Dorkings, and many of them having five toes, are represented as very fine.



THE DORKING FOWL.

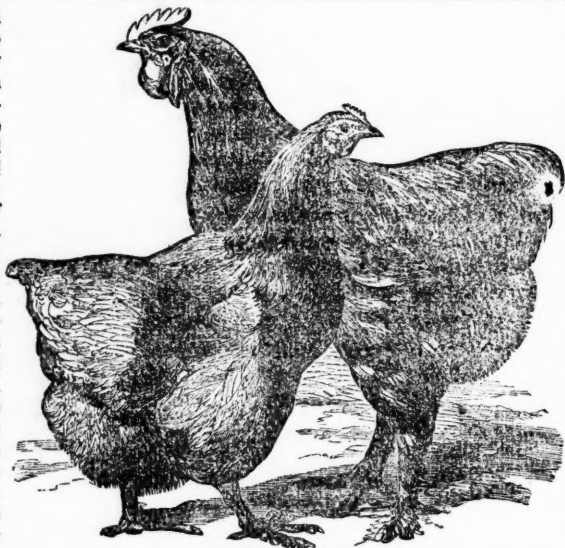
Dr. Eben Wight, of Boston, who imported some of these fowls as early as 1839, and has paid considerable attention to the rearing of poultry, says, in a letter to the author, "So far as my experience has gone, the Dorkings are *decidedly* the best breed for laying; the eggs come abundantly, and are of the largest size, except when they have been bred 'in-and-in' too much. I have already seen the effect, and therefore hope to receive a new lot of Dorkings during the summer." After six months more experience, the same gentleman writes me: "As regards the Dorkings, I am still strongly prepossessed in their favor; as layers, they are certainly very prolific. As an instance, one of my neighbors had a pullet which was hatched in May; in the *same year* the pullet began her litter of eggs, and hatched out her chickens before the first of December ensuing. This is only one of the many instances which could be advanced in their favor."

The general characteristics of the Shanghai fowls are given as follows:

The Shanghai fowl in its varieties, is highly esteemed by many, and considered the best of the Asiatic breeds. The first imported to this country was in 1847.

In enumerating the most important points of beauty and excellence in the Shanghai fowl, we will begin with the hen.

The hen should have a slightly curved beak; the forehead well arched; comb low, single, erect, and slightly and evenly toothed; eyes bright and prominent, with an expression tempering the whole of motherly patience and contentment. The neck about eight inches long, and should be gently arched when held upright, and the head held at right angles with it. The body, from the neck to the origin of the tail feathers, should be long and greatly arched; and the girth of the body, measuring over the wings and before the legs, should be, in the best specimens, about twenty inches. Wings well rounded outward, so as to increase the apparent diameter of the body; their shoulders well nestled in beneath the breast feathers, and the quill feathers short, buried under the mass of feathers which encompass the base of the tail. This mass of feathers is very peculiar, arching from the back to the tail, and sloping off so as to form a slight elevation around the base of the tail. The leg is rather long; color pale yellow with a tinge of flesh color, and generally thickly feathered quite down to the toe on the outer side. The plumage is remarkably soft and silky, or rather downy, termed by some as fluffy, and beneath the tail densely fluffy and rounded. We have chosen the hen as being most uniform in her make and coloring. The eggs are generally of a pale yellow or cinnamon color, not remarkably large compared with the size of the fowl, and generally blunt or rounded at both ends. The fertile qualities of this breed are considered equal to



THE SHANGHAI FOWL.

any other of the large breeds. The flesh of the Shanghai is rather inferior to the smaller breeds, being coarse-grained, neither tender nor juicy, and have more offal and less breast meat than either the Cochins or Brahmas. Their habits are quiet and they are not inclined to ramble, on which account they bear confinement better than any other breed.

The gait of both the cock and hen, when walking slowly, is peculiarly precise and dignified and graceful, but when hurrying, it is a heavy rolling waddle.

Seed Corn—Practical Hints.

EDITOR MICHIGAN FARMER:—Your valuable article on saving seed corn, in the November number of the *Farmer*, so entirely corroborates my own views and practice, that I feel bound to indorse it in full, and to recommend a "second reading" of the same to every one of your subscribers who would like to get their subscription money back, with compound interest, and have a valuable paper to read in the bargain.

The matter of saving seed corn is one that deserves the attention of every practical farmer; especially, since the failure of so many acres the past season in consequence of planting poor seed. I have been in the practice, for several years, of picking my seed corn on the hills as soon as it is sufficiently ripened; by this means I can always select the earliest and soundest ears, which I tie or braid by the husks and hang up in a dry garret, where it will not freeze. I think the great trouble with seed corn is that the germ is injured by freezing before the moisture has dried out of the cob, and that by picking early, and tracing up in a dry place, the trouble is obviated.

Last spring the farmers in this vicinity saw fit to plant their own seed, such as it was, "to venture," rather than pay me at the rate of one dollar per

bushel for seed that was "sure fire." The result was that after "planting over" a few times to no purpose, they concluded to try my early varieties, and by so doing saved their crop of corn.

It is not every farmer that is willing to take the trouble of saving seed corn, or the seed of any other grain or vegetable, so as to have each variety distinct and pure and sound; it is an art, though simple, yet important, and one that every tiller of the soil might understand and practice to advantage, if he would; and, although every one knows the importance of planting good seed, yet rather than buy a good kind at about twice the market value of worthless trash, will prefer to plant, or sow, the latter, and run the risk of harvesting an imperfect crop—or, perhaps, none at all. But, for my part, Mr. Editor, I shall continue to save good seed, plant good seed, and run the risk of harvesting good crops.

I apprehend that the coming spring will test the quality of every grain of corn that is planted; because, in consequence of so much "planting over" last spring the crop was belated and injured by frost, and having been harvested in an unsound condition, none but seed carefully selected and carefully saved will germinate; for the germinating principle was either destroyed by the frost before the corn was matured, or after it was harvested; and I am also of

the opinion that very hard freezing will destroy the germ in any corn, if exposed for a length of time to its influence, the opinion of some in regard to the saving influence of the oil in the grain to the contrary notwithstanding.

I would advise every farmer who has not already secured his stock of seed corn, and that such as he can safely rely upon, to lose no time in doing so, and let him remember that it would be cheaper for him to pay at the rate of twenty-five cents per quart for good sound seed, than to have poor seed given to him and *planted* "free gratis for nothing."

D. D. TOOKER.

Napoleon, Jackson Co., Mich., Dec. 1, 1856.

[All this above we fully endorse, and particularly the last observation. If 50 cents a quart for seed would only save one planting over, it would be the cheapest seed on the farm. A second planting on account of bad seed, makes the seed cost over a dollar per quart. Mr. Tooker says right when he asserts that whoever grows seed ought to be careful. In fact, the growing of seed is a business of itself. Mr. Tooker, by a reference to his advertisement, it will be seen, offers for sale several varieties of corn of his own growth, and we commend his offer to the notice of our readers. He has had a good experience in growing several varieties of seeds, and he means to deal with his customers in good faith.—Ed.]

First Crops for Improved Marsh Lands.

In the December number, there was published a letter asking information as to what crops were likely to prove most profitable on a piece of redeemed marsh. There are two objects to be kept in view in cultivating such a piece of land; first, the immediate growth of a profitable crop, and next the steady improvement and amelioration of the land. The marsh when drained, is not by any means fitted for the growth of crops of high value. It is still raw and very rough. The surface soil which is generally turned up with a broad thin furrow, is composed solely of the vegetable matter deposited from the coarse grasses, and the water plants, which were natural to the marsh when saturated with water. As yet the surface is of a peaty consistence, it has not been mellowed by exposure. Besides this, the surface is not smooth. The lumps and tussocks, and small heaps have not yet been leveled, for a single plowing will not permit this to be done. If the design is to lay the marsh down to permanent meadow, it is all important that the surface should be made as level as possible. To effect this with economy, we incline to that practice which makes a crop of oats first to be taken from a piece of reclaimed marsh, and then following it with corn, to be succeeded if possible by wheat the same season. The crop of oats would serve to kill off and keep under the wild grasses, and at the same time mellow the thin raw

green sod of the first plowing. After the oats are taken off, a plowing in the fall, to the depth of seven or eight inches, should be given to the stubble, and if a coating of lime, of 15 or 20 bushels per acre, can then be given, the next years corn crop will amply repay the expenditure. Lime is of great service in such a soil, as it serves to neutralize the acid with which the soil is apt to be overcharged, and likewise acts mechanically in converting the vegetable muck to a soil of a loamy character. This lime will also have a most excellent effect on the succeeding crops. The crop of corn being taken off, we would burn the cornstalks in the field, and harrow in the ashes; this would be more necessary, if no lime were applied the previous year. The reason why the cornstraw should be burned, is that a crop of oats followed by one of corn, another of wheat, and then grass, would leave the soil too much exhausted of the material necessary to grow a firm, stout, healthy straw, and without a stout straw, a full crop of wheat cannot be had. These three crops managed in this way, with a thorough attention to their cultivation, and particularly to having the work of plowing, harrowing and seeding well done, would for the three years next succeeding the reclamation of the marsh land, repay the owner for all or at least a large proportion of the outlay occasioned by the making of the requisite drains. In cases where the condition of the soil would permit it, corn might be made the first crop; the labor of hoeing such a sod thoroughly, however, renders the crop an expensive one. Again, it must be borne in mind that some marsh lands are almost totally unfit for the growth of wheat, because upon them the straw is so liable to be blighted by rust. The lime would aid in curing this, but still where only a vegetable muck prevails, there is great risk with a wheat crop, even when such land is well drained.

It is frequently the case that a crop of broom corn is found a very profitable one on such a piece of marsh land, especially where enough of help can be had at the proper season. Potatoes also are often found profitable, especially if close to a market where they can be readily sold. The choice in such matters must be guided by due consideration of all the circumstances by which the farmer is surrounded. One point is certain, that those who have been most successful in improving marsh land, invariably have recourse to oats as the crop with which to subdue the sod at the least expense; and we find that this practice is also the most general in Scotch and English husbandry. Last year we perceive that a gold medal was awarded by the Highland Society, for the successful reclamation of a large piece of peat moss, and oats formed the crop which was taken from it for three years in succession, before it was thought fit to be seeded for meadow.

The question may also arise, whether it may not

be more profitable to carry out a series of rotations upon such land, rather than to devote it entirely to the growth of grass. Away from a market for hay, the growth of grass implies the feeding of stock, and the question will arise whether a wheat or a corn crop every four or five years would not pay better than hay. In laying out the plan for the treatment of marsh lands, all these several considerations must have due weight. We shall be pleased to hear from Mr. Bradford on the subject again, and also what system he will adopt, and also from time to time we hope to hear of the results of his experiment.

A Branch County Farm.

BY JAMES CLIZBE, OF QUINCY.

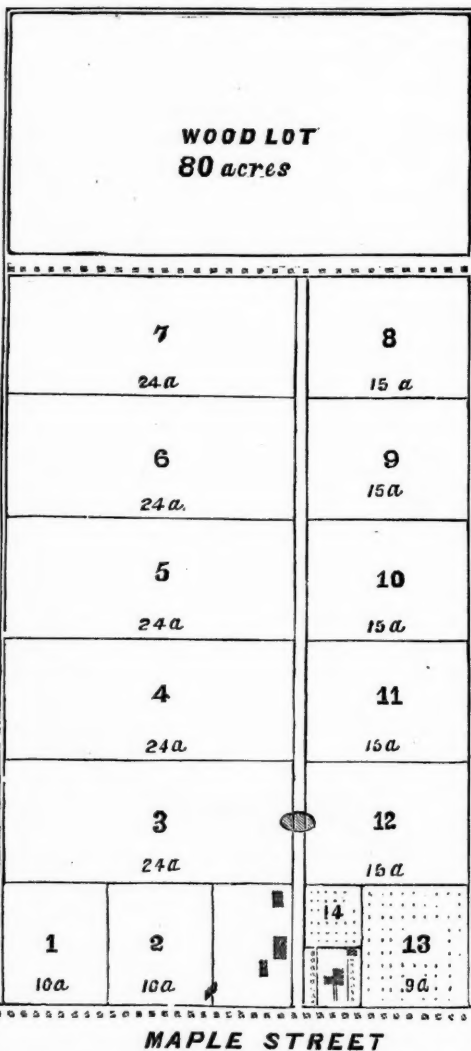
At the late State Fair, Mr. James Clizbe, of Quincy, exhibited a plan of his farm, and before leaving town left it with us to have an engraving made and the plan reduced to a size suitable for the *Farmer*. We have had the engraving made, and present it with the following description, which Mr. Clizbee has furnished. The division of the farm is a good one, giving two ranges of fields of equal sizes, thus permitting two series of rotations. Each field is easily reached from house or barnyard. There are besides two fields of ten acres each, close to the barnyard, which may be used for root crops, or lots in which vetches, roots, ryegrass, for cutting, or corn, or the new plant, the sorghum, or sugar millet, may be grown for fall feeding, when grass is short. The orchards are ample, and well divided, and the whole plan is well considered. The following is Mr. Clizbe's description:

MR. JOHNSTONE, *Dear Sir*:—My farm consists of 320 acres, lying as you will perceive, in one body. Of this about 220 acres are improved, and the rest remains as a wood lot. The east half of the farm was originally prairie and openings, and the west half was timbered land with a maple sugar bush of 400 trees. The soil is a black sandy loam, with a somewhat compact and solid subsoil. The timbered portion has a soil that contains much clay, and I find that it furnishes excellent grass and pasture. The subsoil contains much lime, which renders the land in this vicinity productive of wheat, clover and fruit.

THE DIVISION.—The farm, you will perceive by a reference to the plan, is divided into two portions by the lane or road which runs nearly through the centre. The eastern portion is divided into a range of fields, each containing fifteen acres. These fields are 40 rods in width and about 60 in length. The other portion to the west is divided into fields 40 rods in width by 100 rods in length, each containing 24 acres, with the exception of the lot near the barn, which is subdivided into two lots of 10 acres each, leaving 4 acres for the barnyard. Between these two ranges of fields runs an avenue or lane, three

rods wide, running due east and west. A row of maple trees is set on each side of this avenue, with a distance of three rods between each tree. Gates permit ingress and egress to and from each field into the lane. In the lane there is a small pond of excellent water for the use of the stock, to which they can have easy access either from the fields or the barnyard.

FENCES.—The fences by which the divisions are made between the fields are mostly of oak rails. My method of making fences, is to first remove all ob-



structions, such as stumps and other things, out of the line of the fence, then to lay out a worm, with a six feet inclination, and underlay the first rail with a layer of stone, of the height of one or two rails, being guided in this particular by the quantity of stone I may have that is applicable to such work. The use of stone in this way, keeps the first rail off the ground,

and saves at least one rail in each panel every ten years, and the stone that encumbered the ground is rendered a benefit instead of a nuisance. I consider that it thus pays me the expense of gathering. There are about eight miles of this kind of fence on my farm, which will average about eight rails to each panel, and thus make 46,080 rails as the total now used in fencing. This fence cost me at the rate of 36 cents per rod, and I find that the cost of keeping the whole in repair, when underlaid with stone, is about 5 per cent. on the original cost.

Besides the rail fence, I have one hundred feet of square picket fence in front of the dwelling house, which when finished and painted with two coats of paint, cost me \$5.00 per rod. There are also some post and board fences. In these the boards vary in width from three to five inches; the posts are swamp oak from six to eight inches in diameter, plated on one side, and set top end down. The gates are made to resemble the fence, and are painted, and hung with the patent hinges on the inclined plane principle, thus making them self-shutting. The cost of each gate and its hanging was about three dollars.

Crops.—The crops which I generally grow are wheat, corn, oats, and grass for the use of stock, and to make hay. The usual proportions in which I grow the several crops are, wheat from 40 to 80 acres, corn from 20 to 50 acres, oats from 10 to 20 acres. Enough hay is cut to feed all the stock I may have on hand, either by purchase, or by natural increase. The course I pursue is to give each field a rotation of the crops above named, and to turn under a clover sod for a wheat crop.

Orchards.—There are two orchards, it will be noticed by reference to the plan, viz: lots No. 13 and 14. One of them is intended to grow fruit for family use, and also for experiment or trial, and it contains about 200 trees of twelve years growth, and capable of now bearing 10 bushels each. In this orchard there are a great variety of apples, of summer, autumn and winter sorts. The other orchard contains 500 trees of only four years growth, all grafted in the top. The products of this orchard are designed for sale, and therefore in selecting varieties for it, I confined myself to a few sorts of the choicest quality. These are as follows: 100 trees of Esopus Spitzenburg, 75 Russets, 75 Swaar, 75 Bellflower, 75 Rhode Island Greenings, 75 Pippins, and 100 trees of a miscellaneous selection. The orchards have been well and thoroughly manured from the barnyards, and crops of corn, potatoes and turnips have been taken from them; though I do not now approve of taking off a corn crop.

Drains.—Having no marsh or wet land on my farm, I have not had cause to make any drains.

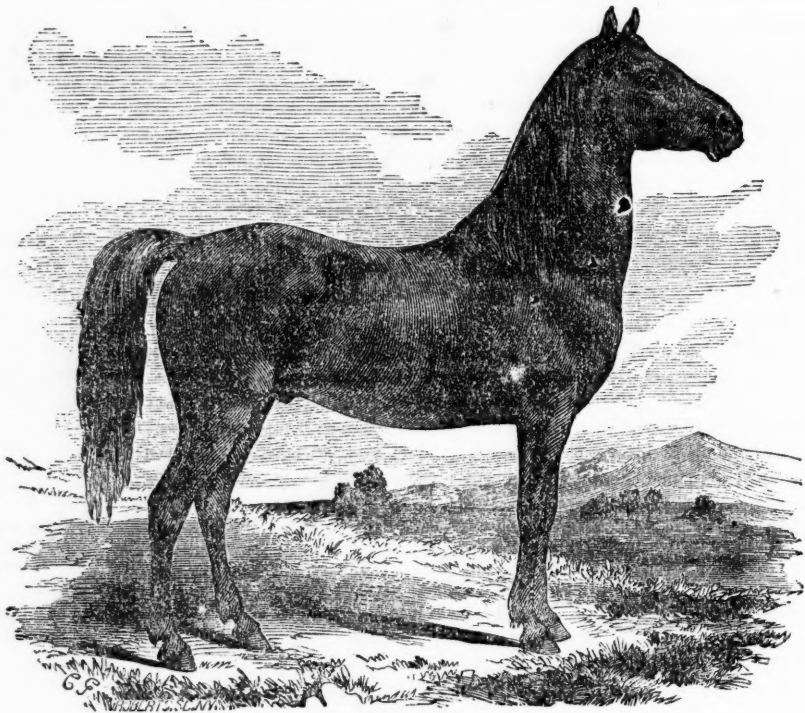
Barns and Outbuildings.—There are two barns used for grain, which are each 34 by 44; a barn used for stowing hay, and for sheep, 16 by 24 feet; a cat-

tle shed, 28 by 36 feet, with a loft for fodder, and also two open sheds, with one end used for stabling cattle. The carriage house is 26 by 36, built with 16 feet posts, giving me a loft for hay. This house was painted with two coatings, and cost me \$300. The hog and corn house, is one building, and is 22 by 22, painted and finished—it cost \$150.

Ornamental Trees.—In a former number of the *Farmer*, I gave you a short description of the ornamental maple trees which I have planted, and which extend for half a mile in front of my farm, with a distance between each tree of two rods. These trees are now about eight years old, and have stems of a diameter of four to five inches. The tops are well formed, and when in full foliage they make a most splendid appearance. The actual cost of setting out these trees, did not exceed \$15. Many trees set out by my neighbors have died during the past dry season, but mine have escaped. My mode of treating these trees is as follows: When planting, I select trees of a second growth, and in taking them up, I have been very careful to get out all the roots as perfectly as possible. In trimming their tops, I have been guided by the pruning which the roots had suffered. The holes in which the trees were set, were all dug of sufficient size to permit the roots to be spread out. When the tree was set in the hole, and the loose earth thrown around it, the tree was well shaken, so that the moist earth might be put in contact with the small roots. When it was found that the earth was dry, water was poured in freely, and at least four inches more of earth was pressed over the roots and around the tree, as snugly as it could be stamped down. I then mulched them by spreading a thick coating of long manure, saw dust or tan bark, and finally completed the work by securing them from hogs and cattle. Nine out of ten of the trees so treated have lived, and become a glory to the eye of the traveler.

The following is a part of my experience with trees last summer, and may prove useful: I have a number of trees that have only been set out for two years, and though they are well rooted, yet during the protracted drouth of last summer, many of them begun to show symptoms of withering. I immediately took a spade and loosened up the earth around them, poured on a dose of water, and then mulched them deeply with long manure. In a short time afterwards, they revived, and once each week subsequent I watered them, until they were fully restored. Young trees that were neglected died out. A strict observance of this method of treating young trees would preserve a great many every year. Of evergreens there are in my front yard four varieties of Pine, Hemlock, Balsam, and Norway Spruce. These all came from Alleghany county, N. Y.

I thus close my description of my farm. In my next I shall treat of the stock necessary for work, for fattening and for other purposes, which I keep, and also of its profits; and I shall also give you a description of my house, accompanied with a plan.



GOLDEN EAGLE.

Morgan Horses,

A Premium Essay on the Origin, History and Characteristics of this remarkable American breed of Horses, with numerous portraits; by D. C. LINDSLEY, of Middlebury, Vermont. Published by Messrs. Saxton & Co., N. York.

This book comes to us at a time when the death of one of the most remarkable of this equine family has just been announced, and one whose name and whose progeny have almost eclipsed those of old Morgan himself.

Mr. Lindsley has got out an essay that will prove a useful and valuable record, and the publishers have furnished it in a shape and with embellishments that make it a handsome, readable volume. The type is clear and large, and the engravings are all good portraits, well printed. In them all can be seen a strong family likeness. In the Black Hawk division, however, may be distinctly noted the improvement which his dam introduced by her superior size, her blood, and her color. Of these portraits, we give one of a horse called Golden Eagle, which is now said to be in Illinois.

The origin and descent of the original Morgan horse is canvassed, and all the reports and affidavits, letters and proofs, extant, are collected in this volume. The author has evidently spared no pains to examine all that has been left concerning the origin of this remarkable horse. He also compares him with the Canadian horses, of which he has been asserted to be a descendant, and shows wherein his

stock differs from them. After thus establishing first the stock of which old Justin Morgan was a descendant, an account of his progeny is given so far as they are known. Mr. Lindsley gives the names of six stallions, of which Justin Morgan certainly was known to be the parent. Three of these only became celebrated, namely, the Sherman, the Woodbury, and the Bulrush Morgans. A chapter is devoted to a description of their several characteristics. The performances of the most noted are also recorded. The book closes with the pedigrees of all the Morgan horses, which the writer was able to trace up to the time of the publication of his book. Amongst these pedigrees we note Bussorah Morgan, and Gen. Gifford, Jr., both now in Michigan, and the property of B. J. Bidwell, of Tecumseh; also President, owned by H. Crane, of Albion, Mich., the Shurtliff horse now in Kalamazoo, and Turner's Black Hawk, now in Ypsilanti.

We close this notice with an obituary of the celebrated Black Hawk, a grandson of Old Justin, by the Sherman Morgan:

"Black Hawk," the famous stallion owned by David Hill, of Bridport, Vt., died on the 1st December, 23 years old.

Black Hawk was foaled in 1833, and was then the property of Wingate Twombly, of Greenland, (formerly of Durham, N. H.) His sire was the "Sherman Morgan" horse, his grandsire the Justin Morgan, famed as the progenitor of the Morgan horses. His dam was a half-blood English mare. When four years old he was purchased by Benjamin Thurston,

of Lowell, and used as a family horse until 1844, when Mr. Hill purchased him, and in the hands of this gentleman he soon became famous. Black Hawk was a little less than 15 hands high, and weighed about 1000 pounds. His color was black like that of his dam, and his colts have been black, bay or chestnut, with hardly an exception. He possessed the character of the Morgan family of horses in an eminent degree. He was symmetrical, muscular and compact in his form, and his elastic style of action, speed and endurance, which qualities he imparted in a remarkable degree to his progeny, rendering him one of the most valuable stock horses ever owned in this country. Black Hawk could trot his single mile in 2:40, and exhibited considerable bottom in longer races. In 1842 he won a match for \$1000, by trotting on the Cambridge track, five miles inside of sixteen minutes. October 3d, 1843, he won a race of two mile heats, beating two competitors easily in 5:43—5:48—5:47. Black Hawk was the sire of several of the fastest trotting horses, on the turf, among which are "Ethan Allan," the fastest trotting stallion in the world; of "Lancet," who has beaten the best time of Lady Suffolk; of "Black Ralph," "Belle of Saratoga," "Black Hawk Maid," &c. He was not only a fortune for his owner, but the value of his stock has added much to the wealth of the State where he was kept. Mr. Hill has received for his services over forty thousand dollars; his last season netted seven thousand dollars, and he was already booked in advance for five thousand dollars. His owner obtained insurance on his life until he arrived at an age when the premium charged was necessarily very high, and he died uninsured.

HOW TO HAVE YOUR STOCK FAT IN THE SPRING.

A good friend from Vergennes, whose pleasant raps we appreciate, writes that if farmers would have their stock in good order when the spring opens, they must,

- 1st, Have their stock fat in the fall;
- 2d, Commence feeding their stock before they begin to lose flesh;
- 3d, Keep over winter no more stock than you have abundance of feed to keep well;
- 4th, Water the stock twice each day at least. If the stock can have water at all times when they desire, so much the better.

I have used the word "stock," to include all animals, because all need water; notwithstanding some farmers shut up their sheep in dry yards, all winter, and have an idea that their animals are all right.

Yours, J. K.

ORIGIN OF THE AYRSHIRE CATTLE—Some of the cattle from Holstein, shown at the great Paris Agricultural Exhibition, were mistaken for Ayrshires, so close was the resemblance in form, color, and general characteristics. The early connection of Scotland with Denmark seems to lead to the belief that the progenitors of this famous milking breed were originally brought from Denmark, and that the Holsteins and the Ayrshires are of the same stock.

Queries for Farmers to Answer.

EDS. RURAL:—I am not a farmer, but if you think the following questions will do any good, publish them; if not lay them under the table.

Will not old meadows be renewed by coating with manure?—and, if manured as much as other land ought to be, grow good crops of grass ten or twenty years as well as three?

Has a "Young Michigan Farmer" thoroughly tried raising roots for sheep, and experimented long enough to know that hay, bran and shorts are the best?

Would it not pay well for farmers to raise good crops of millet, and mow a less number of acres of grass?—and if they did, could they not keep more stock? If they kept more stock, could they not raise more grain for market?

Will hoeing potatoes after they have "set" cause them to "set" again? Is it as well to plant small potatoes as large? Is it best to cut them or plant whole? Old farmers please answer.

EX-BOOKSELLER.

Adrian, Mich., Nov., 1856.

We find the above in the Rural New Yorker, but no answer given to the queries. The writer need not have gone to the State of New York for that kind of information. We furnish him with the following:

1. Old meadows will be much aided by a coating or top-dressing of manure; but in some cases where the valuable grasses are run out, no top dressing whatever will bring them back. In these instances it is more economical to give the meadows a good short three or four years rotation. There are some pastures in the vale of Gloucester in England which grow grass as well now as they did one hundred years ago; but they have been manured and top dressed, especially with ground bones, for some years latterly.

2. We cannot answer for what "Young Michigan Farmer" has done, but there are few in the State who have thoroughly tried raising root crops on a large scale, for the reason, that it is difficult to get the requisite help to hoe, weed and thin them out with that care necessary to secure their full development. Again their liability to freeze from exposure in the winter season makes them not so good for sheep as the articles mentioned, when fed alone. The best feed is the roots along with other articles.

3. Millet makes an excellent fall feed, when the grass is apt to be light or dried up. But unless farmers will undertake to soil their cattle—that is to cut them green food—millet would not be found of much value. More stock would be kept, and of course, more grain would be raised to an acre, because each acre would be better manured than it is now. But before more stock is kept the food must be raised to sustain them.

4. If potatoes are earthed up after they have set it will cause them to throw out new roots, and to make new sets, besides burying the old sets too deep and stopping their growth and increase. Hoeing and keeping the earth loose around potatoes will not cause them to make new sets by stopping the growth of the old sets, and thus spoiling the crop; but as it encourages the growth of the plant it may in many cases encourage the development of new sets, or second or additional number of sets. Small potatoes used as seed give more small potatoes as a crop, because there are generally more eyes in two small potatoes than there are in one large one, hence when small potatoes are used for seed we really plant more seed to the acre than when large potatoes are used. We think a medium sized potato planted whole generally gives the best crop. But the main point is to be sure that just enough seed is planted, and not too much as is the case when small seed is used; and not too little when large potatoes are cut and used for seed.

Horticultural Department.

Scions and Grafting.

Persons who have an eye to the improvement of their orchards, will often come in the way of varieties they wish to secure. Some persons are deterred from securing scions in such cases, by the consideration that it is too early or too late in the season to cut them; or perchance it may be the wrong time of the moon; or they may have examined the works of our professional horticulturists, and finding no prescription exactly adapted to their wants, may have concluded that there is some mystery about the matter, that only the initiated can fathom. The horticultural works of the day seldom contain directions fully adapted to the wants of the novice in orcharding, who frequently has occasion to regraft large trees, with, perhaps, no previous acquaintance with the process. Having felt the pressure of these difficulties, and having fallen upon a practice in some respects different from that usually recommended, the following remarks are offered, with the hope that they may meet the necessities of others similarly situated.

Cutting and Securing Scions.—Scions may be cut at any time after the fall of the leaf, and before the starting of the sap in spring, and will keep safely if buried in some place where they will not be flooded with standing water. A situation sheltered from the direct rays of the sun is preferable, as they will not be so liable to start from the warmth of the earth in early spring. If cut after the ground is frozen, they may be buried in the cellar; care being taken that the earth employed does not become dry. They should be examined occasionally, and the earth moistened, should it become necessary to prevent shriveling. They should be entirely buried, to secure them against the depredations of mice. Usually, the dampness of a cellar will suffice to keep them in good order. Not having tried saw-dust, I am disposed to question its safety, unless in the hands of a careful and experienced person. Whatever substance is employed, it must be so moist as not to encourage the evaporation of moisture from the scions. An excess of moisture will do little damage while the temperature is too low to stimulate growth.

If the cuttings are to be kept late, they must be taken up as soon as the frost is out of the ground, and if a quantity of them, (the more the better,) be placed in a pit two or three feet deep, with a layer of plank near the surface, and a covering of earth six or eight inches deep over the whole, they will keep well till June or July. If cut before the warm weather of March, or April, they have been known to keep through the year. After the commencement of warm weather, they require to be occasionally ta-

ken out and aired, when any that show signs of shriveling must be replaced at the bottom. The above remarks apply to apples. Pears will keep nearly as well; but plums, and cherries, will seldom keep beyond May, and should be used before that time.

Scions of the apple to be set immediately, may be cut much later, if desirable, even after the opening of the buds, if such be selected as have dormant buds, but they are rather more liable to fail. They may also be selected in June, or July, from the young wood of the current season, by taking the ripest wood at the base of the new shoots, and may be set with great certainty.

Transporting Scions.—When it is desired to convey them to a considerable distance, they should be closely packed to prevent rubbing, and enveloped in oiled cloth or silk, to prevent drying. To be sent by mail, which is now much practised, they are cut in lengths of four or five inches; each variety is tied separately with fine thread, the whole firmly bound together with the same material, and enveloped in soft paper, moistened, and then closely wrapped in oiled silk, again closely tied with thread, and then enclosed in strong paper, and securely bound with packthread. Packages put up in this manner may be sent almost any distance with perfect safety.

Grafting is done in a great variety of ways, according to circumstances, and also at almost any season from March till June, or even to July or August, but plums, and especially cherries, should be grafted before the starting of the buds in spring. Pears are surer to be grafted as early as April or May, while apples may be worked with perfect success, as late as the middle or last of June, and by some persons that season is considered preferable.

As plums and cherries should be grafted early, there is no alternative where the stock is large but cleft-grafting; but this is a very rude and clumsy process, and as the grafting wax with which the wound is covered is liable to be crowded off by the subsequent growth of the tree, the wood at the joint is liable to become decayed during the process of healing. On this account, as well as the weakness of the tree at the point of union, it is very liable to be broken down by the force of the wind. The use of large stocks also involve the lopping off of a large amount of top, which frequently is the means of forcing up suckers from the roots, and is sure to give the tree a check from which it will require much time to recover. The obvious way to avoid these difficulties is, to take the trees when young, and change them by what is called, lap, splice, or whip-grafting; which requires the scion and stock to be of the same size, or nearly so, as by this mode very little pruning is necessary, and the wound is healed nearly as soon as the scion commences to grow.

With apples and pears, my practice has been to wait till the bark will start freely, and, when splice

grafting will not answer, to cut off the stock as for cleft grafting, and instead of splitting it, to make an incision in the bark from the top of the stock downward about an inch or an inch and a half, raising the bark on one side of said incision; the scion is then whittled to a point, and to an edge on one side, and inserted under the bark with the back of the scion placed firmly against the undisturbed bark of the stock. Scions set in this way unite at once by their whole circumference, like a lap graft; while a cleft-graft unites only at a single point, and is consequently much more easily blown out.

In transplanting seedlings to be used as stocks for other varieties, my practice is to graft them at once; and I have seldom lost a scion except in consequence of the failure of the tree. My reason for this practice is that trees when transplanted must have severe pruning of the tops, to correspond with the shortening of the roots by removal; which pruning they receive in the process of grafting; and the amount of vigor necessary to produce growth upon the natural plants, will suffice to force growth upon a scion; while if the tree is left to recuperate after transplanting, it must receive a second check in the process of grafting, nearly as severe as the first; but in case of the failure of a scion upon a transplanted tree, the propriety of an immediate repetition of the process is questionable; as the depletion may easily be carried so far as to reduce it beyond hope of recovery.

Regrafting large trees may be done with good success by resort to the process above described. Where the branches of a large tree are lopped off, and scions inserted, their subsequent growth is usually nearly upright, and scions inserted in the central limbs are usually the strongest. Moreover, when they are not all inserted in a single season, those first inserted are likely to take the lead, diverting the sap from the later and less vigorous ones, which frequently become dwarfish, and finally die. To obviate this difficulty, it is well to so lop off the branches and distribute the scions through the head of the tree, that they shall form a well proportioned top with as little pruning of their growth as possible, setting the whole in a single season, and in no case removing more than one-third or one-half the top at a single pruning. Many practice lopping off the whole top of a tree at once, splitting the limbs, and inserting two scions in each; leaving the body and branches exposed to the scalding rays of the sun, and almost without leaves to elaborate the life-giving sap. True the insertion of so many scions acts as a partial remedy, by enabling the tree sooner to renew its leaves; but the sparing of a portion of the branches would answer the same purpose much more effectually, and they can be removed at future prunings, when their place is supplied by the growth of the scions; a large share of which must otherwise be

necessarily removed, as they increase in size, to prevent crowding the top. Many large and vigorous trees, within the knowledge of the writer, have been killed outright by this sweeping process, while many others still stand with its mark as indelibly fixed upon them as if imprinted by the scathing lightning.

Summer management of grafted trees.—Lap-grafted trees must be narrowly watched, and when the ligament about the joint appears to be cutting into the bark, it must be loosened; and if the growth is strong enough to induce a fear that the wind may blow out the scion, it should be re-tied more loosely.

The shoots on all grafted trees should be watched, and in some cases may be removed entirely, especially if the scions have made sufficient growth to supply their place. Usually, however, they should not be disturbed unless they threaten to rob the scion, in which case the tips should be perseveringly pinched off, to check their growth. Any branches overtopping or shading the scions, may be removed at any time. Scions making so strong a growth as to be in danger of injury from high winds, should be carefully tied to some suitable support; and those making growths too long and slender for their own support, may be pinched in or slightly cut back, which will strengthen them and induce branching.

T. T. LYON.

Plymouth, Dec. 1856.

Hot Bed Frames—Get them Ready.

There are some luxuries which every farmer ought to enjoy, and which they can if they will. During a visit to Ypsilanti last spring Mrs. John Starkweather showed us a hotbed and frame, which she had managed herself, and derived a great deal of satisfaction from its productions, and her experience was such that we think others may well try it, getting their minor "half" to prepare the bed and make the frame. The frame itself was made of common inch stuff nailed together, the long way being about ten feet, and the width about four or five feet. This frame was not covered with glass, but instead the sash was a rough frame, on which was stretched common coarse cotton cloth. During the coldest weather and at night this had a further protection of old matting or carpet. Under such a frame were grown radishes, lettuce, onions, and young cabbage plants. Tomato plants, cucumbers, and melons were started so that they were fit for use at least a month or six weeks before those grown in the open ground.

The making of a hotbed is a simple operation, which need not take any one over half a day, at a time when other work is light, and there is plenty of leisure; and when there are young people in the family, it is an employment which may be made useful, instructive and agreeable, as we hope to prove by and by. We refer to it at this time, merely because

during this month the frames may be prepared, and where glass cannot readily be had, the sashes may be made at home, by any one that is handy with the commonest tools. The outside should be of stout two inch stuff, and three inches in width. These frames should be long enough to reach from back to front of the large box frame that is placed upon the hotbed, and three feet in width. Three of them will cover a bed ten feet long, and four will cover a bed of thirteen feet in length. If the bed is six feet across, a strong cross bar should be sunk into the sides like the cross bar of a sash, and from this cross bar strips may be made to reach to either end. The frame is then ready for the cloth covering, and the following preparation will be found an excellent substitute for glass. Take good white cotton cloth, of a thick close texture, and stretch it on these frames. Two yards of yard wide stuff will cover each, and that is why they should be made three feet in width. It may be fastened on with common carpet tacks. This done, give the cloth two or three coats of paint made as follows: Take two ounces of lime water, four ounces of linseed oil, and mix them well in any vessel in which they may be heated gently over a slow fire; then take the whites of two eggs and the yolks of three, and mix them with the cooled lime water and oil. This varnish or paint may then be spread over the cotton cloth, with a paint brush. It will be found that three coats will render the cloth perfectly water proof. Each coat should be allowed to dry thoroughly before the next is applied. This preparation is greatly used in Germany, and it is found superior to glass in some respects. In the first place it is much cheaper; next, it is less liable to injury, and repairs can easily be made; and again, the frames are light to handle, being of such a weight that a girl of ten years old can readily lift them off and on. But still another advantage is, that under these coverings plants grow more healthily than under glass, not being so liable to be scorched, or made to spindle by the heat and light from the sun; and the moisture sent up by the bottom heat is more readily retained in the bed, this covering affording enough light, but light combined with shade, a matter of some importance, as every gardener well knows how watchful he must be of the tender young plants, to give them protection from the strong sun light, as well as from the intense cold.

The work of getting ready such frames may be done during this month or the early part of next, and preparations may be made for beds 6 feet in width, and 6, 9 or 12 feet in length, or of such size as may be thought most convenient.

The box for the frame may be made 3 or 3½ feet high at the back, and two to two and a half feet in front; its other dimensions will be governed by the design of the maker. Some gardeners make these boxes of much less depth, but we like a good depth of soil, and plenty of breathing room for the plants, and this will be afforded by the size we have named.

The Chinese Yam—*Dioscorea Batatas*.

R. F. JOHNSTONE, ESQ., Dear Sir:—In accordance with your request, the result of my experience in the cultivation of this new, extravagantly-puffed, and much-abused esculent is herewith given.

In the spring of 1855, I received from the Patent Office, per favor of the Hon David Stuart, a small tin box, filled with fine yellow sand, which contained three of the tubers, not larger than small peas. Each was placed in a small-sized flower pot, and plunged into a hotbed, where the heat was nearly exhausted, and in a short time all three vegetated. About the latter end of May, when all danger of frost was past, they were turned from the pots into the open ground, which was a sandy loam. Here they were allowed to remain till frost had killed the vines in the fall, when two were dug up to ascertain what progress they had made. The first was cut into by the spade, as it had penetrated deeper into the soil than was expected. The next was taken out whole. The largest was fifteen or eighteen inches in length, and about an inch and a half in diameter at the bottom, gradually tapering to the top, where it was not much larger than a common pencil; the second had two roots or bulbs, neither of which were so large as the first. The third had a very little litter thrown over it, and was allowed to remain in the ground all winter. In the spring it was removed perfectly fresh and sound. It was my intention to allow this to grow the second year where it stood, but an extensive grower at the east, stated through one of our agricultural papers (in reply to some of his customers, who found fault with the size of the tubers sent out) that he would pay twenty-five dollars each for whole roots! so I thought a root so very valuable should be propagated; consequently, it was cut up into transverse sections, along with the others, each being from half an inch to an inch in length. These were started in a frame, potted, and turned out as already described.

The small part of the root is what should be retained for propagation, as the eyes are more numerous, and they seem to grow with more vigor than the lower end, which is the best for the table, being the largest. No cultivation whatever was given them, except to keep them clear of weeds.

This season the roots were much larger than the last, the largest being nearly two feet long, and two and a half inches in diameter at the lower end. This is at a guess, as neither rule nor weight was applied to test the matter. The top was not thicker than the little finger. Weight, from a pound to a pound and a half. The inside of the root is very white, and when cut, a white mucilaginous starch-like substance exudes from the wound. If mashed up, like potatoes for the table, the dish would make a beautiful appearance, being fully as white as rice. Of the edible qualities of the root I can say nothing, never having

tasted one. It is, however, gratifying to find such a favorable notice of its qualities in the last number of the *Farmer*. In this case at least, interested motives have not prompted the compliment.

The root is very easily propagated, single eyes of the vine with a leaf attached, produced quite respectable tubers. Small tubers are also formed on the vine at the axils of the leaves, which appear the same as those sent out from the Patent Office. I was agreeably disappointed at this, as it was stated in their report, that only the male plant had been received in this country. Cuttings of the root make the best plants. It can also be increased from layers of the vine, which is very small, in proportion to the size of the root, not much larger than a straw.

The yield of the root must be large, fully equaling a crop of carrots, and good *deep* cultivation will be absolutely necessary. The roots penetrate the soil in a perpendicular direction, *with the large end down*, so it will be no small job to harvest the crop. The roots show no disposition to grow in the winter, this was abundantly proved, by their being kept all winter in the green house. Small tubers put into pots in the house in February, to induce early growth, rotted, while those planted later did well.

It is said that if left in the ground for two or three seasons, it still keeps increasing in size, and improving in quality. On this point I am unable to speak, but some of the roots have been left in the ground, wholly unprotected, to test them another season.

The gr at question seems to be, Is the Dioscorea likely to be generally cultivated by our farmers? This can only be determined by time. In our latitude a hotbed must be prepared to start the plants in spring, and many would consider this troublesome. But the same has to be done for the sweet potato, and the important advantage it has over the latter, in standing the winter, is much in its favor; besides a hotbed should be considered a necessary appendage to every farm, to forward early vegetables, if a yam should never be raised. Farther south this would not be necessary. Notwithstanding the hardy character of the root, the vine is very sensitive to the influence of the frost.

All who intend to try the cultivation should do so cautiously. Put no faith in exaggerated statements, till they prove it for themselves. By so doing we may avoid another *Morus multicaulis* excitement.

Respectfully,

WM. ADAIR.

A New Pear.

Among the new varieties of pears lately introduced and proved, one of Van Moris' seedlings, named the *Compte de Flandres* is now attracting much attention as a choice fruit. M. de Jonghe of Brussels, pronounced it to be one of the very best new pears, and gives a description of it as follows:

Eye large, open, level with the top, with the five

segments if the calyx projecting. The sides form three ribs near the eye, skin yellowish green at the time of gathering, freckled with brown, especially near the stalk, which is woody, and about an inch in length. The tree is vigorous, hardy, and an abundant bearer, when it is worked on good pear stock planted in a rich soil, and trained, not as a dwarf pyramid, but as a half standard. Trained in this way it makes branches and thick shoots which are slightly kneeed in ascending, and bears, after eight or ten years, handsome and excellent fruit, ripening in January and February. As the fruit is very heavy, and is apt to be blown down by the equinoctial gales it is prudent to gather it a day or two before the full moon of September.

A NEW GRAPE.—The Rev. James Brennan, of Hamilton, C. W., has originated a new seedling white grape, which he calls the Canadian Chief. The editor of the *Horticulturist*, to whom a been sent some of the fruit, states that it somewhat resembles the Chasselas. The bunches of fruit weigh from a pound to a pound and a half, and the vine is represented to be a very prolific bearer.

Messrs. Schubler and Kohler, of Tubingen, eminent botanists, have found that white flowers are the most numerous in nature, and that they are also the most prolific. Red flowers are the next in order.

Plants are in their most vigorous state of growth at the time of flowering, and should not then be transplanted, as they would very likely suffer much from the operation.

The period of flowering is considered the best time to make cuttings of plants, as the tendency to form roots is then strongest and most active.

A correspondent of the *Horticulturist* affirms that the seeds of melons, cucumbers, pumpkins, and the cucurbitaceæ generally, are better for planting when several years old than they are at first, and that plants from old seeds produce the least foliage and the most fruit. To this assertion the editor affixes the word, *oubtful*!

In the natural condition or growth, the leaves and branches of plants rarely touch or cross each other. We should learn from this, not to crowd plants too close together, nor to place a single plant in a confined position, where its leaves and branches have not room to expand or develop themselves freely and fully. Air and light are as essential to the vigorous and healthy growth as earth and water.

When a grass plot is pervaded by moss, apply some rich fine manure, or irrigate it frequently with liquid manure. This will reinvigorate the grass and enable it to subdue and expel the intruder.

The Household.

"She looketh well to the ways of her household, and eateth not the bread of idleness."—Proverbs.

EDITED BY MRS. L. B. ADAMS.

A Glance at the Past.

Most of the romance of our lives is either in the future or the past. Anticipation and memory are the magic glasses in which the harshness of reality disappears, and while hope tints the future with brightness, we see the past in a softer light than when it was with us, the living, real present. The Christmas and New-Years holidays of long ago are full of these softened pictures. Not one of the ten children surrounding our father's table at the old farm house twenty years ago, ever dreamed there was anything romantic or poetical in the life we led, and yet to look upon it from this distance there was much of the coloring and harmony of both. It is true there was a great deal of hard work and household drudgery to be done, to keep us all properly clothed, and fed and schooled; and the getting to school was of itself no trifling matter, as nearly a mile of wilderness lay between us and the village; but in this we soon grew to be quite independent, establishing a little district of our own, setting apart what was intended for the "best room," when the house should be finished, as a school room, and installing our eldest sister as teacher. There in our little domestic academy, we pursued the studies we had commenced at institutions of more pretension, varying our exercises by taking turns week about at the housework with our mother. In the course of time a school house was built in the district within half a mile of us; and by this time, too, our own house, which was but a frame, roofed and sided, without doors, windows, chimney or partition, when we went into it, had progressed to a state of completion, under the influence of our father's saws, hammers, planes and paint brushes.

The school room was needed for a "sitting room," (we had no parlors in those days,) and the new rag carpet, evenly striped, dyed and woven by our mother, the white curtains at the windows, the clock on the mantel, the little square-legged stand by the window opposite the fire place, and the six straight-backed Windsor chairs, which had already done some eighteen years of faithful service without losing their solid coat of brown paint, primly set along the wall, made it a place too luxurious for common use, and it was only occupied in afternoons, when the housework was done, or when we had company, or on Sabbath days. But the pleasiest rooms in the old farm house were the dining room and the cellar kitchen, and the merriest times we children knew were the long winter evenings when, by the light of

the blazing kitchen fire, beside which our candles grew pale and our cheeks red, we studied our lessons, wrote compositions, cracked walnuts, popped corn, told stories and riddles, and rehearsed school dialogues. Yet, pleasant as all this might have seemed then, it is far pleasanter to think of now that all the little annoyances, the weariness of the day's labor, the necessity that drove us to the accomplishment of our tasks, and the consciousness that tomorrow would renew the labor and the necessity, are forgotten.

These holiday times at hand remind me of our Christmas suppers, when at each end of the long table stood a mammoth candle, with its seven spreading branches, the manufacture of our own hands, all flaming at once, lighting the old dining room as with the blaze of day, revealing the abundance of the well filled board, with whole droves of brown dough-nut pigs, dogs, cats and horned cattle among the dishes, and a troop of eager children crowding to their places. And then came the ceremony of burying the old year on New Year's eve, when we marched in procession from one room to the other, bearing a miniature coffin of white paper, wreathed with evergreen cedar and pink paper rosebuds of our own making, and chanting a dirge composed for the occasion by one of our number.

We had our Fourth of July celebrations too, when for a morning salute, our oldest brother would climb upon the roof, and placing the hacked and battered stock of an old musket, which had done service in the last war with England, across the top of the chimney, awake the reverberating echoes of the wood and the sleeping inmates below with the unexpected roar of its discharge.

And then the wild pets caught and tamed by the boys, the 'coons, squirrels, cat-owls, gophers and robins that delighted our eyes and ears with their music and tricks and cunning; and the strawberry times, and the nuttings, and the huskings which brought the autumn round again to the verge of winter and the glad holidays coming,—all these pass before me in memory's glass like the softly tinted pictures of a panorama, and I have a joy in them now which the reality never gave.

How many such families as ours were there now all through our beautiful State—families who are busily sketching on the canvas of time pictures which memory will one day hold to their view. O, remember that every charm you add to the reality of the present, will heighten the pleasure with which you will look back upon it in the future. Then when the holidays come that bring not the scattered loved ones together again under the dear parental roof, each in his distant home, or in his wanderings by sea or land, may live his youth over again, and be made happier and stronger for the future by the pleasant memories of the past.

Farmers' Homes.

I am not a farmer's wife, and yet my tastes, habits, all lead me to love and appreciate a home in the country, the farmer's life.

From a child there has always been an inborn desire in my soul to dwell in the country, in the farm house. I love the quiet and retirement of what constitutes to me such a home as this. But I have an ideal of my own; it is a homestead of love and affection, where the brothers and sisters are all brought up, each to take their own share of the work, and have all things work on together harmoniously, and none of that coarseness now too often seen.

I would have my ideal family interested not only in their farm duties, but in what is going on in the world. Have them readers and thinkers, as well as workers. The daughters should be able to devote a portion of their time to those refinements which certainly help to adorn character. Smile not unthinkingly friends, when I say I would have them find time to decorate their homes, ornament the little parlor with specimens of their own needle work. Smile if you will, but I am well satisfied that even these things, which you may call frivolities, help to lighten their tasks and make them love their homes.

The cultivation of flowers about your homes is another fruitful source of enjoyment; and if the brothers will but have their little yard neatly fenced off for them, the sisters will not only take real comfort, but you will find that they are more truthful, more refined in nature, than if they had grown up to womanhood and only understood the art of cheese and butter making.

Why should not the farmer's home be surrounded with all that makes life hopeful and contented, when they have so much more about them to commence with than the rest of mankind? With homes of their own, which they can beautify if they will, they need not seek for happiness beyond their own precincts. Yet how often do we see the farmer's family, the sons and daughters, looking forward anxiously to the time when they can leave the old homestead, the sons for the mercantile department, the daughters eager to marry any but a farmer's son. And why is this? Because their homes have not been pleasant ones. They have toiled from early morn until nightfall, since their remembrance, and they are wearied. They look upon city life with eager longing, while those reared among brick walls, pine for the healthy breeze, the sparkling rivolet, and the smell of the new mown hay. We do not understand the rich sources of happiness we have within us, else we would not, could not seek to confine ourselves to the mere making of money.

Farmers, would you have your sons and daughters continue upon the old homestead, give them suitable instruction which shall make them love their homes better. Allow them to cultivate their tastes,

the love for the beautiful, whether it shall be in the flower garden, the soul-inspiring music, or the finely embroidered needlework. Don't confine them unceasingly to the mere substantialities of life, lest they become wearied and dissatisfied with their home duties.

D. A. S.

Minoaka, Ill.

[The above excellent letter from a Michigan lady now residing in Illinois, contains suggestions worthy of attention by the wives and daughters of farmers, and we thank her for it. The homes she speaks of as ideal, are not without their counterparts in reality; still they are far from being as common as they should be. But the great efforts that are being made to educate farmers, and to elevate their calling in their own eyes, are also having an influence upon their families, and instilling into them a pride and ambition which is already making itself manifest in the increasing neatness and comforts of rural homes all over the country. Farmers have too long been ashamed of their occupation. They did not know enough about it to make anything but drudgery of it, and the children, of course, could know no better than to look upon it in the same light their parents did. But these clouds of ignorance are fast clearing away, thanks to the inquisitive propensities of the age, and the lights that are everywhere springing up, revealing to the tillers of the soil, order and beauty and independence in the life they once looked upon as degraded, and utterly aimless beyond the mere necessities which forced them to support existence. Farming is fast getting to be one of the "learned professions," and soon, if there is any charm in a name, the occupants of the farm house will not look with envious eyes at the lawyer's documents, the merchant's yard-stick, or the doctor's saddle-bags.]

Domestic Economy.

We find in the *Grand Rapids Eagle*, of December 1st, an essay on the above subject, written by Mrs. E. H. Ballard, to whom was awarded the first premium of the Kent County Agricultural Society. This is a move towards progress in the right direction. It is, we think, the first instance in our State where an agricultural society has awarded a premium to a woman for writing, and the first we have heard of where a woman has been a competitor for premiums on essays. And yet why should she not? Who is more competent, or better qualified by actual knowledge, to advise, suggest, or instruct in matters of household economy? And how much more deserving of reward is she who thus spends her time and improves her talents in benefitting others, than she who wastes her time and money on useless patch-work, or gallops around a race-course, cheered, jeered, laughed at, pitied and praised by the motley crowd assembled to witness the perform-

We give one or two extracts from Mrs. Ballard's essay, not having room for the whole. We hope all county societies will hereafter have an opportunity of rewarding like efforts. Honor to Kent for having set the example.

"Perhaps I cannot better introduce a consideration of the subject before us than to glance at a few things which may be considered decidedly uneconomical. It is uneconomical, then, for the mistress of a family to take upon herself all the care and labor of the family if it is large. A mother, who has some half a dozen children, has but poor conceptions of economy, who, to accomplish her daily tasks, turns out upon the neighborhood those children, to soil and destroy their clothes, and injure and degrade themselves by coarse, vulgar and boisterous exercise. Thus, while she toils and wears herself out with hard labor, her children, for want of care, will often destroy more in one day, than would liberally reward a good girl for her services a whole week. And here, permit me to say, when you receive a domestic into your family, be economical in your treatment of her. Do not grind from her every drop of strength and energy she has, simply because you have hired her time. If she is degraded, try and elevate her. Give her one hour in the twenty-four to raise her thoughts above the daily routine of scouring, scrubbing, and washing, washing, scrubbing, and scouring. Let your girl feel that you take an interest in her aside from selfish and pecuniary considerations, and you will almost invariably secure faithful and efficient help. There will, it is true, sometimes be exceptions to this remark, but in such cases all you have to do is to dismiss the one in present employ and try again. What an opportunity for usefulness is here afforded. A lady can often labor more hopefully and effectually for the benighted in her own kitchen, than many who leave their country and their homes to carry civilization to a foreign shore—and sometimes it requires almost as much self-denial—but is it less a christian duty?"

Girls, as well as boys, should be taught to render themselves useful. Let them lend a helping hand in domestic labor. Every young lady should understand how to superintend the household economically, and to know this effectively, she must labor herself.

A want of domestic knowledge will greatly interfere with the quiet, regularity, and comfort of a family. Many a young housekeeper, whose mother wished her daughter to be free from care and labor, and thus never gave her any knowledge of domestic duties, when placed where she must assume the responsibility, has become so perplexed, discouraged and miserable under a sense of domestic cares, as to be really unhappy and wretched. Do not, mothers, as you value the respect of your daughter, or the quiet of your own conscience, do not permit her to enter so illy prepared upon the duties of life. While no young lady is excusable for pursuing such a course, the mother is generally most in fault. What if your daughter's hands are not quite as delicate, and her cheeks a little flushed with the morning's exercise, is it not quite as becoming as the artificial tint which is often laid on with so much skill and care at her toilet? Necessary labor is commendable. "Oh, I would not, for the world," said said one of these useless daughters, in my hearing, "be caught washing dishes." "Be caught washing

dishes," replied one of her common-sense companions, "I would as soon be caught washing dishes as be caught working muslin or playing on the piano." Young gentlemen, be careful you are never caught marrying such a girl. No matter how handsome or agreeable she may be, she will not, depend upon it, be caught exerting herself to make her home happy or herself useful; and in her estimation, it would be decidedly vulgar and unbecoming to be economical. A young lady educated with such notions, should never think of assuming the important duties of the house or the wife. Girls should be taught economy. While it is honorable to labor, it is dignified to save. "Gather up the fragments," says our Savior, "that nothing be lost." Many a bankrupt citizen has been reluctantly forced to feel that his misfortunes were, in a great measure, attributable to the extravagance of his family, who sacrificed their independence upon the altar of fashion."

For Housekeepers.

We give below a few seasonable receipts gathered from our exchanges. The remedy for burns is especially in point at this season, when, in spite of the watchfulness of mothers, accidents from fire will happen. It is spoken of in terms of the highest praise by those who have tried it, and the facility with which it can be obtained and applied makes it doubly valuable. It was originally published in the Philadelphia United States Gazette:

REMEDY FOR BURNS.—"I have so often seen remedies for human ills given in the newspapers, and then at once consigned to oblivion, that I have for a great while hesitated to present this remedy to the public. For fourteen years I have prescribed it, and witnessed its healing effects. I deliberately say, from fourteen year's experience, that no disease or injury to the human system has a more certain remedy than this for the most distressing of all injuries, that of scalds and burns. The relief is almost instantaneous; from a minute or two to a half an hour, will usually find a full relief from pain. No matter the extent of the burn, even if all the skin is removed from the body. The first knowledge I had of it was the almost miraculous cure of a little boy, who fell into a half hog'shead of boiling water, prepared for scalding the bristles from swine. The entire person the limbs of the boy passed under the scalding water and up to the chin so as to scald his whole neck. On removing his clothes, nearly all his skin followed from his extremities. In this deplorable condition, literally flayed alive with scalding water, the remedy was promptly applied as a momentary application until the physicians should arrive. Two eminent physicians soon came, and on learning the extent of the scald, pronounced it a certainly fatal case, and directed the boy to remain with the remedy over him until he should die. In six weeks he was restored quite well, with scarcely a scar on any part of his person or limbs. The remedy increases in value from the fact that under almost all circumstances it may be obtained. It is as follows:—Take soot from a chimney where wood is burned, rub it fine, and mix one part soot to three parts or nearly so of hog's lard, fresh butter, or any kind of fresh grease, *that is not salted*; spread this on linen or muslin, or any cotton cloth for easier and more perfect adapta-

tion. If in very extensive burns or scalds, the cloth should be torn into strips before putting over the scald. Let the remedy be freely and fully applied, so as to perfectly cover all the burned parts. No other application is required until the patient is well, except to apply fresh applications of the soot and lard, &c.

In steamboat explosions, this remedy can in nearly all cases be at once applied, and if done, many valuable lives will be saved, and a vast amount of suffering alleviated.

If you and the corps editorial, will hand the remedy around our country, and invite attention to it, and that also those who use it may give their testimony for or against, I feel assured that in a few months this most efficacious and almost unfailing remedy will be everywhere known and used in the United States.

A PHYSICIAN OF PHILADELPHIA.

GALL SOAP.—Take one pint of beef's gall and cut up about two pounds of hard soap; put it over the fire; let it simmer until it is all dissolved, then pour it in a deep basin and when cold cut it in pieces. This soap is excellent to prevent any kind of colored goods from fading. Black calico will not become rusty if washed with it.

MR. WEBSTER ON COOKING POTATOES.

DEAR FLETCHER:—I send a quarter of lamb to roast; and if not too rainy will come to dine with you. Tell Mr. Baker the hour.

Potatoes. Let these potatoes be peeled early, and thrown into a basin of cold water till time to cook them. Let them be boiled in a good deal of water. When done, pour off all the water, shake up the potatoes a little, hang on the pot again, and then bring them to the table. I remember when we heard Hannah Curtis shaking her pot we knew that dinner was coming.

D. W.

HOCK.—One pound of rump steak, one pound of pork steak, half a loaf of bread; chop all together like sausage meat, add two beaten eggs, and season with salt, pepper, and sage or summer savory. Bake like a loaf of bread. To be cut in slices and eaten cold.

Enigmatical Charade.

Dick Sherwood said in the household,
That he should shun all women bold,
Except a lady he should find,
To glory in his rights so kind,
Now a syllable from each line
I claim to be most truly mine,
For all learned people love my name
Because for words I have a fame.

Napoleon.

J. W. WEBSTER.

Miscellaneous Enigma.

I am composed of 17 letters.
My 1, 5, 4, is a boy's nick name.
My 12, 13, 8, 14, is what we all like to attend.
My 2, 10, 15, is a part of a hog.
My 1, 3, 11, is a number.
My 6, 7, 5, 11, is part of the face.
My 9, 14, 13, 15, 4, 10, 17, is a useful study.
My whole is cordially welcomed by all its patrons.

Utica, Mich.

CLEANTHA.

Answer to Puzzle No. 1:—IN. Answered by Cleantha, of Utica; H. S. S., of Kalamazoo; G. D. M., of Romeo.

Answer to Historical Enigma:—SWEET BUTTERMILK. Answered by H. S. S., of Kalamazoo.

Will G. C. send a solution of his Problem; the one we had is lost. No answer has been sent.

MICHIGAN FARMER.

ROBERT F. JOHNSTONE, EDITOR.

DETROIT, JANUARY, 1857.

Almanac for 1857.

Days of the Week.								Days of the Week.							
MONTH	SUNDAY.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.	MONTH	SUNDAY.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
JAN'RY	4	5	6	7	8	9	10	JULY---	5	6	7	8	9	10	11
	11	12	13	14	15	16	17		12	13	14	15	16	17	18
	18	19	20	21	22	23	24		19	20	21	22	23	24	25
	25	26	27	28	29	30	31		26	27	28	29	30	31	
FEB'RY	1	2	3	4	5	6	7	AUG'ST	2	3	4	5	6	7	8
	8	9	10	11	12	13	14		9	10	11	12	13	14	15
	15	16	17	18	19	20	21		16	17	18	19	20	21	22
	22	23	24	25	26	27	28		23	24	25	26	27	28	29
MARCH	1	2	3	4	5	6	7	SEPT'R	30	31	1	2	3	4	5
	8	9	10	11	12	13	14		6	7	8	9	10	11	12
	15	16	17	18	19	20	21		13	14	15	16	17	18	19
	22	23	24	25	26	27	28		20	21	22	23	24	25	26
	29	30	31						27	28	29				
APRIL -	5	6	7	8	9	10	11	OCT'BR	4	5	6	7	8	9	10
	12	13	14	15	16	17	18		11	12	13	14	15	16	17
	19	20	21	22	23	24	25		18	19	20	21	22	23	24
	26	27	28	29	30				25	26	27	28	29	30	31
MAY----	3	4	5	6	7	8	9	NOV'R-	1	2	3	4	5	6	7
	10	11	12	13	14	15	16		8	9	10	11	12	13	14
	17	18	19	20	21	22	23		15	16	17	18	19	20	21
	24	25	26	27	28	29	30		22	23	24	25	26	27	28
	31								29	30					
JUNE---	1	2	3	4	5	6	7	DEC'R-	1	2	3	4	5	6	7
	8	9	10	11	12	13	14		8	9	10	11	12	13	14
	15	16	17	18	19	20	21		15	16	17	18	19	20	21
	22	23	24	25	26	27	28		22	23	24	25	26	27	28
	29	30							29	30					

Appointments.

The following gentlemen have been appointed by the Michigan State Agricultural Society, delegates to the Fifth Session of the American Pomological Society, viz: T. T. LYON, Plymouth, S. O. KNAPP, Jackson, J. C. HOLMES, Detroit.

J. C. HOLMES, Secretary.

We have been obliged to lay over several important articles which it was our design to put in this number, and also some valuable communications which will be read with interest when published. Amongst these are descriptions of the Sorghum, or Sugar Millett, its growth and its uses; articles on the uses of lime, wood ashes, leached and unleached; on Hungarian cattle, with an illustration, and also on several other subjects. We call attention to the article in the present number on hotbeds. We shall follow it up with practical directions on the making and management of this important item of family comfort, and also by practical notices of the growth and botany of the plants usually grown in them. The articles on insects, furnished us by Dr. Goadby, are already attracting much attention, if we may judge by the letters we have received from various localities, expressing great satisfaction at the appearance of papers so valuable on a subject so little understood.

The New Year.

With the new volume we turn over a new leaf, and wish our readers a happy new year. The farmer should also commence preparations to turn over a new furrow. At this season, when there is ample leisure, and out of door work is not pressing, the farmer should take time to do a good deal of head-work—to plan out, or design what shall be the routine to be pursued in all the departments of the farm during 1857. Those who do not, or have not been in the habit of keeping a record of expenses and income, should now make an attempt to reduce them to form. They should begin by numbering their fields, by taking an account of stock, of implements, and of all the material on the farm. Let them make an estimate, even if it be nothing but a rough guess, of the value of what is now in their barns and in their yards, and as it is sold or consumed, credit that department with what it thus furnishes. Each field being numbered; make an account with it, estimate as generally as you please, what that field will cost you during the coming season, how many days' work, how much for manure, how much for seed, and what will be its return.

It is true that from many incidental circumstances over which there can be no control, the very best arrangements may not be carried out, still they will always prove a guide, and be found of service in carrying on business with order and economy. Another duty to which your attention should be given now, is the improvement of your land, and a study of the best methods of rendering it productive, either by draining, by manuring, or by a rotation of crops. No undertaking should be tried before you have counted the cost, and your own ability to carry it out. Do this work at this season, and note how all this will enable you to meet the year 1858 with increased wealth and prosperity.

The high price of sugar is directing attention to the importance of manufacturing it from the sugar maple, of which there is large and excellent growth in this State. Preparations should now be made to have all the necessary apparatus on hand to make a good article. Practical directions on the subject will be found in the volume of the *Farmer* for 1856, and one of these articles by a first rate sugar maker in this State. On this subject, we shall be pleased to receive further practical hints in time to be published in the February number.

Another duty which should be faithfully attended to at this season, and ought not to be neglected, is that of subscribing to the *MICHIGAN FARMER* for 1857. Be sure and send your own name, and at least one new name with it.

We hope in our next number to give the conclusion of Mr. Woodruff's articles on the Barometer and its Uses.

The Daines' Tile Machine.

We again take pleasure in calling attention to the advertisement of Daines' Tile Machine, which is an invention that must come into very general use wherever drains are needed and clay can be found to make them. We have lately had an opportunity to witness its operation, and find it to be remarkably simple and easily managed. This machine is a Michigan invention, and will be found worthy of adoption. The principle on which this machine works is very similar to a simple and cheap machine to which was awarded a medal lately in France, as being one of the best tile machines known. One of the main differences is, that the French machine worked with a lever, and Mr. Daines' works with a wheel and screw, the American being in this respect the superior, as is usually the case in all labor-saving inventions applied to agriculture. Any man can learn to work this tile machine in an hour, the only point about which there would be any difficulty would be the tempering of the clay before being put into the moulding box. This invention is calculated to make not only horse shoe tiles, but also sole tile, and pipe tile; all that is needed is an alteration of the dies to suit the work. The working of this tile maker need not occupy ten feet square in the corner of any shed or barn, where it may be put up. Two men can work it to advantage; or for that matter, a man can work it alone if he so chooses, and it will easily perform all that Mr. Daines promises, and we think a good deal more.

The machine has been awarded a premium, and considerable commendations, wherever it has been shown. In Ohio, we find the press speaking of it very favorably, and at the State Fair and Oakland county fair it was awarded premiums. The committee at Pontiac reported on its merits as follows: "This machine of John Daines' is of great worth, as combining all the improvements that experience has suggested for years past, is cheap in construction; easily worked, and produces the most perfect tile."

J. A. Baldwin, the General Agent for the *Farmer*, is now on visit to the central counties, for the purpose of appointing agents, settling up old accounts, soliciting subscriptions, and making preparations to commence the year with all old scores balanced. We depend upon the friends of the *Farmer*, and the farming interests, to aid him in the performance of the duties he has undertaken.

LEONARD SCOTT'S REVIEWS.—We have frequently had occasion to call attention to the Quarterly Reviews, and to Blackwood's Magazine, published by the Messrs. Scott & Co., of New York. The whole are published at the rate of \$10 per year, and are the most valuable periodicals for learning and research issued. The commencement of the year is the time when new volumes be gin.

HARPERS' NEW WEEKLY.—The Messrs. Harper will issue a new weekly paper, on the first of January, which we judge from their advertisement, and the style in which they get up their serial works, and also from the knowledge we have of the resources at their command, must secure a large patronage from the reading community. Their advertisement is worth attention.

THE NATION.—Messrs. Crofut & Bigelow have sent us the first number of a new paper named *THE NATION*, which we find filled with reading of a very entertaining and amusing character. It is published in Philadelphia. Their advertisement shows what are the designs of the publishers, who are amply able to do all they promise.

A PREMIUM.—In the present number we have given some extracts and engravings from Bement's Poultry Book, just issued by the Messrs. Harpers, of New York. These specimens do not give a full idea of the book, which besides has a number of large lithograph portraits of varieties of poultry. It is a valuable work, and whoever will get us up a club of 12 subscribers, and send us the pay, will receive from us a copy of this work.

✂ We have on hand communications from L. Beach, from Freedom Monroe, relative to his propelling whiffle tree, and from A. C. Briggs, which came too late for use this month. They will appear next month. The latter requires diagrams, which will be put in the hands of the engraver forthwith.

THE MAGAZINE OF TRAVEL.—This is a new periodical, published by W. Isham, Esq., at the rate of \$1.25 per year. It is issued monthly, and will contain Travels in Europe, by the Rev. Dr. Duffield, and Mr. Isham's experience in the East. It is very neatly got up and will make a handsome volume.

✂ It will be noticed that H. D. Emery, of Chicago, is prepared to furnish any quantity of good seed of the new Sugar Millet, or *Sorghum Saccharatum*.

THE HOME: *A fireside monthly companion and guide, for the wife, the mother, the sister, and the daughter; published at Buffalo, N. Y. and edit d by Mrs. H. E. G. Arey.*

THE HOME is one of the best monthlies for social family reading we have on our own list of exchanges. It is entirely devoted to the cultivation of home virtues, and by instructions conveyed in sketches, stories, biographies, brief essays, poetry, and well-written editorials seeks to purify and refine the domestic atmosphere by teaching woman what she may be, and what she should be, to make her life a blessing to herself and others. Mrs. Arey is an agreeable writer, both in prose and poetry, and her editorials are always interesting and full of valuable instructions. The work has just reached the close of its first year. A new volume commences with January. Price \$1.50 in advance. Published by Beadle and Adams, Buffalo.

Feeding Horses.

R. F. JOHNSTONE, Esq.—Sir: Your remarks in the December number of the *Farmer*, in relation to the amount of hay and grain, which a horse will consume per day, have attracted my attention. The actual amount of food consumed by a horse will depend upon his form and disposition. I have found that horses of a compact form and quiet disposition, weighing about 1200 lbs., and exerting a force equiv-

alent to moving 150 or 200 lbs. at the rate of two miles per hour, for 10 hours per day, and six days in the week, will require each twenty pounds of oats, fourteen pounds of hay, and seventy pounds of water, with a comfortable stable, to keep them in good order. Then also much of the condition of the horse will depend on his having a driver who knows how to use him without harshness.

This is the conclusion I have arrived at after thirty years' experience, with a great number of horses on my hands the most of the time. The cost of keeping horses for farm work is expensive, when compared with the cost of keeping oxen or mules.

Respectfully yours, W. J. DAVISON.

Chelsea, Dec. 8, 1886.

[The above letter on the subject of feeding horses, is valuable, as showing what is the value of the work of a horse. If Mr. Davison had added to it his estimates of the cost of feeding, according to the money value he put upon the articles fed, it would have been still better.—Ed.]

The Agricultural College.

The following Circular, from the Hon. Ira Mayhew, Superintendent of Public Instruction, will give all interested in the Agricultural College full information in relation to the institution, and the rules which have been adopted with reference to the reception of pupils:

The Agricultural College of the State of Michigan is located three miles east of the village of Lansing, upon a farm of nearly seven hundred acres. The west wing of the College Buildings, and a Boarding House, have been erected, and arrangements will be made for opening the Institution the first Wednesday of April next.

As but a limited number of students can be accommodated, owing to the want of the necessary buildings, and as applications from the various counties of the State are entitled to preference in the order of time in which they are made, it becomes important that persons desirous of securing situations, make their applications for admission at an early day. These may be made to the Secretary of the State Board of Education, by letter, at Lansing, any time before the fifteenth day of January.

AGE AND SCHOLARSHIP OF APPLICANTS.

Applicants for admission as pupils must have attained the age of fourteen years, and must have acquired a good primary school education.

TUITION AND BOARD.

Tuition will be free to pupils from this State. Arrangements will be made to accommodate students with board at reasonable rates, in the boarding house on the premises.

MANUAL LABOR.

Every student will be required to devote a portion of each day to manual labor, for which he will be entitled to receive an equitable remuneration.

COURSE OF STUDY.

The course of study has been arranged with direct reference to the wants and interests of the agricultural class in our State. It will embrace a wide range of instruction in English Literature, in Mathematics, and in Natural Science. Special attention will be given to the Theory and Practice of Agriculture in all its departments and minutiae.

TERM TIME AND ATTENDANCE.

The first term of the Institution will commence on the first Wednesday in April, and will end on the last Wednesday in October. The second term will commence the first Wednesday in December, and end on the last Wednesday in February. Students will not be received for less time than one term, unless for special reasons satisfactory to the Board of Instruction. Persons desirous of admission, should present themselves for examination at the College the Monday previous to its opening.

By order of the State Board of Education,
IRA MAYHEW, Secretary.
Lansing, Dec. 10, 1886.

Swamp Lands.

It has been ascertained that the whole amount of the swamp lands granted to the State is 5,831,454 15 acres. The one half of them, however, it will be seen by reference to the following table, lies in the upper Peninsula. The following are amounts contained in each of the land districts. The Duncan land district is not named because it was not established when the grants were made out.

Ionia district.....	1,218,289 29
Detroit do.....	315,075 6
Kalamazoo do.....	99,534 40
Genesee do.....	1,623,620 31
Total in Lower Peninsula.....	3,255,904 04
St. Marie and Duncan districts.....	2,575,549 11
	5,831,454 15

Of these lands there have been sold altogether 142,933 09, most of which were by the Hon. Porter Kibbe, the late commissioner. The applications for these lands are being made every day, but as yet the commissioner has no power to sell them nor is there any law an existence by which the actual settler who is the man who would improve them, can have a preemption right. The proper disposal of these lands, for the best interest of the state, and also with a due regard to their speedy and ultimate improvement will be an important measure for the consideration of the legislature this winter. In connection there should also be enacted some general law by which their drainage may be promoted, and thus provide some method of procedure, so that one fractious owner may not debar the owners of lands lying above from conducting their drainage water to a lower level; for the sale of the swamp lands is of less consequence, in our opinion, than their speedy improvement. Their monopoly by mere speculators should also be guarded against. We hope the legislature will take good care that their ultimate disposal will result not only in adding wealth to the Treasury, but also in putting many acres of valuable lands into the hands of farmers who will improve them, and thus add real and permanent wealth to the State.

Wool.

Judging from the present prices and the demand for wool, the prospects of the wool growers for the ensuing season is reasonably good. We would therefore advise them not be in a hurry to get rid of too many of their sheep this winter, with the idea of reducing their flocks, at a time when there is reason to suppose that the produce will repay them better than it has done for several seasons. There is a great deal said about the removal of the duties now levied upon foreign wool, and its effects upon the producers. Comparisons are instituted to show that when the duty was taken off wool in Great Britain, the consumption increased so fast that the price of native grown wool rapidly advanced. Whether this

would be the case in the United States can only be determined by actual experiment. The whole business of the manufacturer and the consumption are so very different, and the relations of the United States with other countries, so far as the wool interest is concerned, is so unprecedented, that no such comparison can be instituted. We however for the present, advise wool growers to take good care of their sheep during the winter season, and to watch the market.

THE PATENT REPORT FOR 1855.—The Agricultural part of the Report from the Patent office has reached us from the hand of the Commissioner. We find that there is still continued the same excellent arrangement, which was adopted two or three years ago. The volume is very interesting and instructive. It is illustrated with some richly colored engravings of Devon cattle, and also engravings of insects injurious to vegetation. This volume is printed on good paper, and is creditable to the government. We shall dip into its contents occasionally for the instruction of our readers, and let them know what we think of it in future numbers.

J. S. C., of Mount Clemens is referred to the advertisement of Mr. Tooker in this number who has just such corn as he wants. The communication referred to was sent in from a respected correspondent.

We are indebted to the Hon. Robert McClelland, Secretary of the Interior, for a copy of his report on his department.

The Eaton Republican is pleased to speak of the Farmer thus: "We have never read a number of this Magazine without being strongly impressed that each page contained enough valuable information to repay the year's subscription. With only enough land for an onion bed, this Magazine would pay. There are many of our farmers who are not aware of the wealth a dollar will bring by the way of the 'Michigan Farmer,' intelligently read."

The United States Agricultural Society.

The following circular from the Hon. Marshall P. Wilder, President of the United States Agricultural Society, has been received, and we ask attention to it:

The Fifth Annual Meeting of the United States Agricultural Society, will be held at the rooms of the Smithsonian Institution, in the city of Washington, D. C., January 14, 1857, at ten o'clock, A. M.

Business of importance will come before the meeting. The Report of the Exhibition at Philadelphia, and the Journal of the Society for 1856 will be distributed to the members present. At the same time, Awards of Premiums on Field Crops will be made; the Officers of the Society for the ensuing year elected, and the propositions which have been received in relation to the Fifth Annual Exhibition acted upon.

A lecture will be delivered on the application of Science to Agriculture, by Professor Henry, of the Smithsonian Institution. Another Lecture on the Grasses of the United States, will be given by Chas. L. Flint, Esq., Secretary of the Massachusetts State Board of Agriculture.

Other Lectures and interesting discussions are expected on subjects pertaining to the objects of the Association.

The various Agricultural Societies of the United States are requested to send delegates to the Meeting, and all gentlemen who are interested in the welfare of American agriculture, who would promote a more cordial spirit of intercourse between the farmers in different portions of our land, are invited to be present.

MARSHALL P. WILDER, President.
WM. S. KING, Secretary.

The Markets and their Prospects.

The closing of navigation has not had as yet any great effect upon prices. The feeling in favor of keeping prices as they now are seems good. Though the stock of wheat, corn and flour, which has gone forward to the eastern markets has been unprecedentedly large, still the shipments have not left a very large stock on hand at the close of navigation. The foreign markets are quiet, and prices are maintained without material change. There is a general impression that our farmers have got rid of the most of their crop of wheat and live stocks the rates here remain steady, with a good supply at the same prices quoted last month. Dressed hogs are beginning to come in freely from the surrounding country, and also from the west. Prime carcasses for family pork sell on the market at \$6.25, but very good lots are taken by the retail pork merchants at \$6.00. Light hogs under 200 pounds, are not worth so much. Butcher oil, prime quality keeps well up, and is firm at quotations. Poultry has been very plenty for the past week, and is now cheaper than it has been at any time during the season. The current price of most of the different articles of farm produce are as follows:

BREADSTUFFS AND GRAIN.		SEEDS, PLASTER, SALT, &c.	
Flour, bbl.	\$5.00 a 6.00	Clover per bush.	\$7.50 a 8.50
Cornmeal, 100 lbs.	1.37 1/2 a 1.50	Timothy	2.75 a 3.25
Buckwheat, 100 lbs.	1.35 a 1.50	Red top	1.75 a 2.00
Wheat, bush.	1.15 a 1.20	Blue grass	3.00 a 3.50
Corn, bush.	0.56 a 0.60	Richard grass	3.00 a 3.50
Oats, bush.	0.44 a 0.45	Sandusky plaster, bbl.	1.50 a 1.75
Barley, per 100 lbs.	2.25 a 2.37 1/2	rand river	1.50 a 1.75
BEEF, MUTTON, &c.		N Y Plaster	
Beef on foot.	\$2.50 a 3.50	Sandusky water lime	1.50 a 1.75
Beef dressed	4.00 a 5.50	N Y do	1.31 a 1.50
Sheep, dressed per lb.	0.03 a 0.04	Salt fine bbl.	1.75 a 2.00
Sheep on foot.	2.25 a 3.50	do coarse	2.25 a 2.50
Hogs per lb 12 1/2, per lb 16	6.00 a 7.00	MISCELLANEOUS.	
Turkeys	1.00 a 1.50	Apples per bush.	62 1/2 a 75
Chickens, per lb.	0.37 1/2 a 0.50	White flax, half bbl.	4.50 a 5.00
Geese	0.37 1/2 a 0.50	White beans per bush.	2.00 a 2.50
Eggs per dozen	15 a 20	Sheep pelts	50 a 60
Butter, per lb fresh	24 a 25	Hay, timothy, ton	9.00 a 10.00
do Brain	17 a 19	Common	7.00 a 8.00
Cheese per lb.	9 a 11	Honey	20 a 25
		Potatoes	62 1/2 a 75

Meteorological.

REVIEW OF THE WEATHER FOR AUGUST, 1856.

BY L. WOODRUFF, ANN ARBOR.

Thermometer at	7 A. M.	2 P. M.	9 P. M.
Highest temp. in month	70° (2d)	87° (1st)	75° (1st)
Lowest do	47° (31st)	68° (29th)	49° (30th)
Average	59.5	75	61.8
Monthly mean	65.6		

MONTHLY VARIATIONS.

Greatest daily mean	70.6° (1st)	Least	56.6° (30th)
Greatest daily range	25° (31st)	Least	7° (18th)
Clear days	25	Part clear	7
Cloudy days	6		
Days on which it fell	4		
Total amount of rain	1.392 inches.		

WINDS.

W., 3 days; N., 4 days; E., none; S., 4 days; S. W., 5 days; N. W., 15 days; N. E., none; S. E., none.

REMARKS.

The weather of this month was somewhat remarkable for low temperature, and moderate precipitation. The heaviest rains occurred on the 2d and 18th, the former being accompanied by considerable thunder and lightning. The temperature and pressure of the atmosphere were more uniform than usual during this month, and the average of the former was several degrees below the general mean.

There was thunder on 5 days, and high wind on the 7th and 8th.

REVIEW OF THE WEATHER FOR SEPTEMBER, 1856.

BY L. WOODRUFF, ANN ARBOR.

Thermometer at	7 A. M.	2 P. M.	9 P. M.
Highest temp. in month	74° (10th)	89° (10th)	72° (10th)
Lowest do	37° (24th)	48° (24th)	40° (24th)
Average	52.5	69.5	56.8
Monthly mean	59.6		

MONTHLY VARIATIONS.

Greatest daily mean	78.3° (10th)	Least	41.6° (29th)
Greatest daily range	35° (4th)	Least	8° (30th)
Clear days	11	Part clear	1
Cloudy days	11		
Days on which it fell	11		
Total amount of rain	1.782 inches.		

WINDS.

W., 3 days; N., none; S., 5 days; S. W., 10 days; N. W., 6 days; N. E., 1 day; S. E., 5 days.

REMARKS.

Warm and showery weather prevailed during the first ten days of the month, though the quantity of rain which fell was by no means sufficient to obliterate the effects of the previous drought. But little rain fell during the latter part of the month, and springs and wells in this vicinity show the effects of the longest period without a heavy soaking rain which we have, perhaps, ever known. Although a considerable amount of rain fell here during last summer, yet coming in brief showers it penetrated very little below the surface and it is a remarkable fact that so far during the present year there has not been a single protracted storm the rain of which amounted to three-fourths of an inch. There was thunder on 6 days and very high wind during the showers of the 10th and 18th.

A PERFUMED BREATH.—Who Lady or Gentleman would remain under the curse of disagreeable breath when by using the BALM OF A THOUSAND FLOWERS as a dentifrice would not only render it sweet but leave the teeth white as alabaster? Many persons do not know their breath is bad, and the subject is so delicate their friends will never mention it. Pour a single drop of the BALM on your tooth-brush and wash the teeth night and morning. A fifty cent bottle will last a year. A beautiful complexion may easily be acquired by using the Balm of a Thousand Flowers. It will remove tan, pimples, and freckles from the skin, leaving it of a soft and roseate hue. Wet a towel, pour on two or three drops and wash the face night and morning. Shaving made easy, wet your shaving-brush in either warm or cold water pour on two or three drops of Balm of a Thousand Flowers run the beard well and it will make a beautiful soft lather much facilitating the operation of shaving. Price only Fifty cents.

Beware of counterfeits and imitations, none genuine unless signed by **FERRIDGE & CO., Proprietors,** For sale by all druggists. nov-5m New York.

CHINESE SUGAR CANE SEED!

THE Subscriber have made arrangements for, and have now on hand a moderate supply of the seed of the above plant, well ripened, and may be relied on as GENUINE.

Plant in drills 4 feet by 8 inches. Enough to plant 1.5th acre, put up in strong linen packages, sent by mail, post paid, on the receipt of \$1, or a proportionate quantity by Express at purchaser's expense.

Order early to secure the seed. ALSO—A full assortment new and fresh Garden Seeds, imported and American growth.

FIELD SEEDS AND GRAIN of the most desirable kinds Flower Seeds, the finest variety. Full catalogues gratis on application. **HENRY D. EMERY & CO.,** Jan '57 2t No 204 Lake st., Chicago, Ill.

CORN! SEED CORN!

MICHIGAN RED BLAZE, Long Island White, New England Yellow, King Philip, Adams Early Dent, and the Flour or Bread Corn, all early varieties, saved with care, pure, and warranted to grow! 12 cents per quart, \$1 per peck, \$3 per bushel, in sacks by Railroad or Express to any part of the country.

Also the genuine Mexican Potato, pure Holland Oats, Egyptian skinless Barley, and Chili Potato at the same rate, and samples by mail for the postage!

Send current money or postage stamps, and full directions to **D. D. TOOKER**, Napoleon, Jackson co., Mich. Reference—Editor Michigan Farmer. Jan '57 1t

\$1,000 A YEAR.

WANTED—In every county in the United States, active, industrious and enterprising men, as Agents for the sale, by subscription, of valuable and interesting books; all of them being expressly adapted to the wants of every family, and containing nothing of a pernicious or injurious tendency.

Our publications are among the best in the country, and good Agents can realize a profit of from \$3 to \$5 a day by engaging in the business. A small capital of only \$50 to \$100 is required. For further and full particulars, address

LEARY & GETZ, Publishers, Jan 57-2t No. 138 North Second st., Philadelphia.

SCIONS OF RARE AND VALUABLE VARIETIES!

THE Subscriber is prepared to furnish scions of nearly all the standard varieties of fruit, and also of many rare and promising sorts, cut from bearing trees, as follows, viz:

For not more than two or three scions of each variety, properly packed and sent by mail—for each variety ten cents, and postage added.

For one dozen scions of each variety, packed and sent as ordered—for each variety of Apples, ten cents; of Pears, Plums, or Cherries, twenty cents, with packing and charges added.

Larger quantities of the more common sorts at reduced rates. Plymouth, Jan 37 3t **T. T. LYON.**

DOCTOR HOOFLAND'S
CELEBRATED
GERMAN BITTERS,
PREPARED BY

Dr. C. M. JACKSON, Philad'a, Pa.

WILL EFFECTUALLY CURE

LIVER COMPLAINT, DYSPEPSIA, JAUNDICE,

Chronic or Nervous Debility, Diseases of the Kidneys, and all diseases arising from a disordered Liver or Stomach.

Such as Constipation, Inward Piles, Fullness or Blood to the Head, Acidity of the Stomach, Nausea, Heartburn, Disgust for Food, Fullness or weight in the stomach, Sour Eructations, Sinking or Fluttering at the pit of the Stomach, Swimming of the Head, Harried and difficult Breathing, Fluttering at the Heart, Choking or suffocating sensations when in a lying posture, Dimness of Vision, Dots of webs before the Sight, Fever and Dull Pain in the Head, Deficiency of Perspiration, Yellowness of the Skin, and Eyes, Pain in the Side, Back, Chest, Limbs, &c. Sudden Flushes of Heat, Burning in the Flesh, Constant Imaginations of Evil and great Depression of Spirits.

The proprietor is calling the attention of the public to this preparation, does so with a feeling of the utmost confidence in its virtues and adaptation to the disease for which it is recommended.

It is no new and untried article but one that has stood the test for ten years' trial before the American people, and its reputation and sale is unrivalled by any similar preparations extant. The testimony in its favor given by the most prominent and well known Physicians and individuals in all parts of the country is immense and a careful perusal of the Almanac, published annually by the proprietor, and to be had gratis of any of his Agents, cannot but satisfy the most skeptical that this remedy is readily deserving the great celebrity it has obtained. Principal Office and Manufactory. No. 96 Arch St., Philadelphia, Pa.

GREAT CURE OF PILES.

CAMDEN, N. J., March 12, 1855.

DEAR SIR—It is with much pleasure I take this opportunity of informing you of the great benefit I have derived from the use of a few bottles of "Hooiland's German Bitters." For a number of years I have been sorely and severely afflicted with pain in the stomach, attended by attacks of the Piles, for which I tried a great many remedies, but without affording me any relief. Being advised to use the German Bitters, I did so, using in connection for the Piles, your *Spikenard Ointment*, and I now inform you that they have entirely cured me and resorted me to health, and I would advise all the afflicted to use your valuable medicines, &c.

Respectfully yours, MARGARET REPSHER.

No. 45 Plum Street, Camden, N. J.

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40,000 APPLE SEEDLINGS, SELECTED, SUITABLE for Root grafting. 100,000 Apple Seedlings—suitable for Budding, ALSO: Fruit Trees, Ornamental Deciduous and Evergreen Trees, Shrubbery.

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THIS GREAT WORK, is the most desirable and complete Guide to the,

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It contains the most elaborate instructions for all the labors of the Farm, for *Draining and reclaiming Lands*; for the use and application of manures; for the construction of Farm buildings; for the treatment of diseases of animals; with *Splendid Illustrations*, in every department, on Steel and on wood.

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DEMUS TWO years old, light roan large size (Prize Bull.) B. JAKE, one year old dark roan (First premium Bull,) also cows yearlings and calves and Leicester Sheep. Pedigree furnished. For sale by R. DAWSON,
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THE subscriber having purchased the exclusive right of manufacturing and vending **D. B. ROGERS' Improved Steel Cultivator Teeth**, throughout the north half of the State of Indiana and all the State of Michigan, except the counties of Oakland, Lapeer, Genesee, Calhoun, Kalamazoo, and Hillsdale, now offers to supply his district with said Teeth, made of the best quality of spring steel, and in the latest improved shape.

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All orders for Wheel Cultivators, or Cultivator Teeth, filled on short notice.

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April 1, 1856.

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(Office Room No. 9 Sheldon Block opposite Farmers' & Mechanics Bank, Jefferson ave., Detroit, Mich.)

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KETCHUM'S Patent Mowers, at Manufacturer's prices, adding freight, at Chicago Agricultural Warehouse and Seed Store. 204 Lake st., Chicago, Ill.

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 MANUFACTURER of Carriages, Buggies and Waggon, which are constantly for sale.—Painting and Trimming executed with despatch.—Also Blacksmithing in all its various branches. All articles of work done to order Shop on Detroit St., Ann Arbor, Michigan. je '55:tf

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PURE SUFFOLK PIGS, FRO J. M. SHERWOOD, stock of Auburn, N. Y., of the J. Jackson importation, price, \$10 each at eight weeks old and over. For sale by J. A. ROBINSON.
Battle Creek, Mich. Oct. 15, 1856 nov1*

TO EVERYBODY

ANY PERSON, BY SENDING TO THE UNDERSIGNED A letter, informing us of their Post Office address, will be put in the way of making a small fortune in a short time.

Address
Dec-1t

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Beaver Dam, Dodge Co., Wisconsin.

BOLLES'S CROSS-CUT SAWING MACHINE.

The attention of the public is again asked to this most

COMPLETE LABOR SAVER.

One that truly has the approbation of all men far and near who have used them, in all cases giving full satisfaction, and is beyond doubt the Best Machine known to cut Wood, Staves, Hubs or Shingles, firm and compact, only weighing 1000 lbs. with truck and log carriage 24 feet long, easily transported in a common wagon box, and adapted to any kind of power, fitted for tumbling rod or band; may, or may not be stopped to change the log, which is easily done even by a boy, and with a two-horse power and one hand will saw 20 to 35 cords of wood per day, and is a profitable Machine for thrashers to buy to use with their Power and Team after thrashing season is over, as I never knew one that would not command \$5 per day, giving full satisfaction.

PRICES:

All complete with saw.....	\$60 00
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Twenty-four inch buz saw ready for use.....	38 00
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I have also for sale the *Little Giant Corn and Cob Mill*, Grain Drills, Danford's Mowers and Reapers Pitt's Corn and Cob Mills, Horse Powers and Thrashers, &c. &c.

Orders thankfully received and Machines forwarded to any part of the country by railroad.

GEO. N. BOLLES.

KALAMAZOO, MICH., October 15, 1856.

nov3t

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THE GREAT ENGLISH REMEDY.

Prepared from a Prescription of Sir John Clarke,
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THIS invaluable medicine is unfailing in the cure of all those painful and dangerous disorders to which the female constitution is subject. It moderates all excess and removes all obstructions and a speedy cure may be relied on.

TO MARRIED LADIES

It is particularly suited. It will, in a short time, bring on the monthly period with regularity.

Each bottle, Price One Dollar, bears the Government Stamp of Great Britain, to prevent counterfeits.

Caution.

These Pills should not be taken by females that are pregnant, during the first three months, as they are sure to bring on miscarriage; but in every other time and in every other case, they are perfectly safe.

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Oct. 1st, 1855.

6m

PURE BRED STOCK FOR SALE.

THOROUGH BRED DURHAM CATTLE, Pure Bred French Sheep, Pure Bred Spanish Sheep, and Pure Bred Essex Pigs and Suffolk Pigs. Apply to J. S. GOE, Tippecanoe, Fayette Co., Pa., 4 1/2 miles East of Brownsville. April, 1856. ap 1v*

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MANUFACTURER and dealer in Ready Made Clothing. His assortment will always be found complete. Also, an assortment of Cloths, Cassimeres, Vestings, and Gentlemen's Furnishing Goods. Custom Work and Cutting done to order. No. 11, Phoenix Block, Main street, Ann Arbor, Mich. jet

1856. FARMER'S WAREHOUSE. 1856

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Dealers in all kinds of Agricultural Implements, Garden and Field Seeds, Salt, Plaster and Water Lime.

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SAMPLES of Australian and Tuscany Seed Wheat can be seen at our Store.

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Imported direct from England by T. D. NEWELL, of Rochester, N. Y.,

BLACK SPANISH,

from the best imported stock, and

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that cannot be surpassed for size or for their laying qualities. All of the above stock warranted true to their names. Eggs or chickens from any of the above breeds safely put up for transportation. All orders or letters of inquiry directed to COOK & HODGES Detroit, will receive prompt attention. E. COOK, July, '56, 1yr J. P. HODGES.

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FOR Sale five Rams, of the pure Cotswold Breed, from stock imported in 1853, at great expense, by Capt. Spencer Peel, selected from some of the best flocks in Gloucestershire, England. These Sheep took 1st Premiums at the Michigan State and Essex county Fairs, in 1854.

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Amherstburgh, C. W.

Sept. '56 17

CLOVER HULLERS & CLEANERS, different patterns. D. O. & W. S. PENFIELD. Sept:5t

GILMORE'S PATENT BEE HOUSE AND HIVE.

PATENTED JUNE 5, 1849, PATENT EXPIRES JUNE 5, 1863.

THE undersigned has purchased the right for the counties of Eaton, Calhoun, St. Joseph, Branch, Hillsdale, Lenawee, Monroe, and Saginaw. Offers individuals rights in those counties with Book of directions for building managing, &c., for \$5.00. This plan secures swarms from being robbed. Comb is renewed once in three years. Feeding facilities, unsurpassed. Bees swarm out or go from hive to hive at the will of the manager. Superior inducements to clubs for town rights. Agents wanted in every township.

Vermontville, April 16, 1856.

C. SMITH.
May. 11.

A. GILMORE'S PATENT BEE HOUSE AND HIVE. PATENTED JUNE 5TH, 1849.

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WAYNE, OAKLAND, AND MACOMB,

is now prepared to sell

INDIVIDUAL RIGHTS

with a book of instructions for building House and Hive, and the management of bees, for five dollars.

A liberal discount to clubs for town rights.

The plates and descriptions are plain, giving the length, width, and thickness of each piece of timber, so that any carpenter can build the house and hive from the book. With this Bee House and Hive, any individual can have the bees perfectly under his control, and obtain the surplus honey without the destruction of the bees.

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N. B. Agents wanted for selling right in every town in the above counties.

April 11

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DR. CALVIN M. FITCH;

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PERMANENT OFFICE

At No. 459 Main Street, Buffalo, N. Y. where he may be consulted daily, (Sabbath excepted) from nine to five, for THROAT AND PULMONARY DISEASES, more particularly CONSUMPTION, ASTHMA AND CHRONIC BRONCHITIS, in the treatment of which a judicious combination of Remedial measures, the employment of Mechanical and Constitutional Remedies, and of Medicinal and Stenotherapeutic Inhalations, give him a degree of success which can never attend a merely partial treatment of these Affections. Dr. FITCH may also be consulted for all derangements of the system preceding, or giving rise to Pulmonary Diseases, particularly CATARRH, DYSPESIA, COSTIVENESS, AND FECALE COMPLAINTS. Persons wishing to consult, but unable to visit Dr. FITCH, can do so by sending him a written statement of their case. A personal examination is however always preferable, as important symptoms are sometimes overlooked by the patient; and also as constant practice in consultation enables Dr. FITCH to determine the condition of the Lungs with great accuracy; thus of course enabling him more successfully to modify and adapt treatment to individual cases.

CONSULTATIONS FREE.

Dr. C. M. FITCH has associated with himself in practice Dr. J. W. SYKES, for a long time his assistant, a gentleman in whose professional ability he has the highest confidence; and he furthermore wishes it distinctly understood that he has no longer any professional connection with Dr. S. B. Fitch, but that communications will hereafter be addressed to

July, '56, 1 year

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459 Main street, Buffalo, N. Y.

HICKOK'S CIDER MILL.

A Entire new, enlarged and improved machine.
Price \$40. D. O. & W. S. PENFIELD.
Sept: 31

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Sept: 21 D. O. & W. S. PENFIELD.

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THE SATURDAY EVENING POST.

ESTABLISHED AUGUST 4th, 1821.

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